Electrolux

LÍDER MUNDIAL EM ELETRODOMÉSTICOS

SERVICE MANUAL

REFRIGERATOR DF36

MODULE I

TABLES AND SPECIFICATIONS

REVISION 0

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1. GENERAL INFORMATION

1.1 Produced Model

FROST FREE REFRIGERATOR				
MODEL	COMMERCIAL CODE	MODEL CODE	PNC	PRODUCTION START
Frost Free Refrigerator DF36	02344FEA306 02344FUA306 02344FFA306 02344FDA306 02344FHA306 02344F6A206 02344FQA106	DF36	925026275 925026278 925026279 925026280 925026281 925026282 925026283	June/2004

1.2 Commercial Code Description

The commercial code is printed in an identification tag localized inside the refrigerator cabinet (left side) containing the following data:

a. Product line:
02 – Two door refrigerator Curitiba unit

b. Capacity:
34 – 346 liters

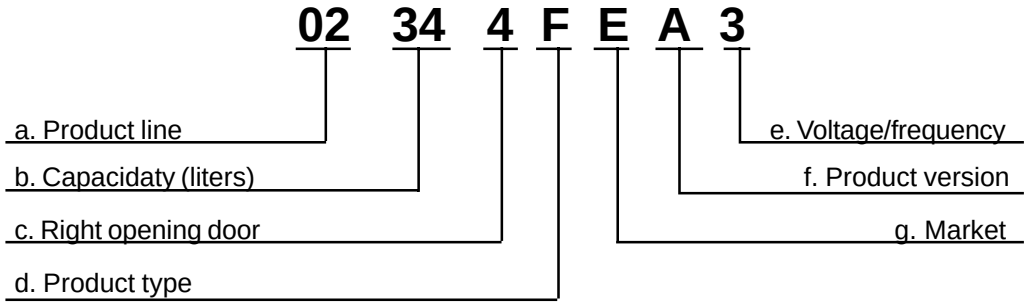
c. Number and type of doors:
4 – door with right opening

d. Produc type:
F – Frost Free

e. Voltage/frequency:
1 - 127V/60Hz
2 - 220V/60Hz
3 - 220V/50Hz

f. Product versiob:
A – 1st version
B – 2nd version
C – 3rd version and so on

g. Market:
Indicates whether the product is for the internal market (B) or the external one (another letter or number).



Example:
02 – Two doors refrigerator (combined) Curitiba unit
34 – 346 liters
4 – Hinges on the left side
F – Frost Free
E – Argentinean market
A – Version A (1st version)
3 – 220V/50Hz

Note: *The example above only shows how to identify in the tag the code field.*

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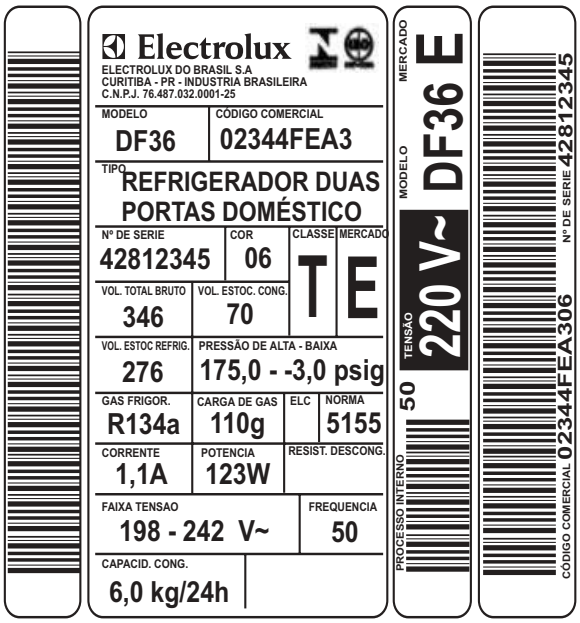
1.3 Identification Tag

The Electrolux products are identified through a tag on the appliance which contains valuable information for the Authorized Maintenance Service.

Model
Model DF36



Commercial Code
Nine alphanumeric digits referring to the product's commercial code.

Color
Two digits indicating the product's color: 06 - white

Type
A maximum of 60 alphanumeric digits, indicating the model and specifications of the product.

Serial Number
Eight digits indicating the year, week of production and a sequential number, according to the following pattern = YWWSSSSS, where Y = last digit of the year; WW = week when the product was built; SSSSS = a production sequential number for the week.

Gross Total Volume
Four digits indicating the product's declared volume.

Volumetric Capacity of the Freezer
Four digits indicating the freezer's volumetric capacity.

Volumetric Capacity of the Refrigerator
Four digits indicating the volumetric capacity of the refrigerator.

Class
Letter indicating the product's climate class (T class - Tropical).

Market
Letter identifying the market.

High Pressure
Three digits indicating the refrigeration system pressure.

Cooling Gas
A maximum of five alphanumeric digits indicating the name of the cooling gas used in the refrigeration system.

Gas Charge
A maximum of four digits indicating the charge in grams of cooling gas loaded in the product's refrigeration circuit.

Current
This field contains a maximum of two digits followed by one decimal indicating the product's working current.

Potency

A maximum of four digits indicating the electric power to be absorbed by the product.

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2. PRODUCT SPECIFICATIONS

MODEL CODE		DF36
TYPE		REFRIGERATOR / FREEZER TWO DOORS
PRODUCT DIMENSIONS (mm)	WIDTH	600
	DEPTH	745
	HEIGHT	1725
PACKAGED PRODUCT DIMENSIONS (mm)	WIDTH	640
	DEPTH	760
	HEIGHT	1775
NOMINAL CAPACITY (litros)	FREEZER	70
	REFRIGERADOR	276
	TOTAL	346
FREEZING CAPACITY		6 kg/24h
NET WEIGHT (kg)		66
GROSS WEIGHT (kg)		68
REFRIGERANT GAS		R134a
GAS CHARGE (g)		110 ± 5
DEFROST		ELECTROMECHANIC TIMER (EVERY 8 HOURSOF COMPRESSOR OPERATION)
HIGH PRESSURE (psig)		210 (STABILIZED REGIME PRESSURE)
LOW PRESSURE (psig)		-1 (STABILIZED REGIME PRESSURE)
CLASSIFICATION		3 STARS
POWER CONSUMPTION (kWh/MONTH)	127/220V - 60Hz	55,6
	220V - 50Hz	37,9
PARTS & ACCESSORIES	INTERNAL LAMP (15W)	1 IN THE REFRIGERATOR
	PRODUCT LEVELING	2 FRONT LEGS

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3. ESPECIFICAÇÕES DE COMPONENTES

MODEL				DF36		
COMMERCIAL CODE				**02344FQA106**	**02344F6A206**	**02344FEA306 02344FUA306 02344FFA306 02344FDA306 02344FHA306**
VOLTAGE (V) / FREQUENCY (Hz)				127 / 60	220 / 60	220 / 60
VOLTAGE RANGE (V)				103 - 135	198 - 242	198 - 242
POTENCY (W)				133	130	123
CURRENT (A)				2,0	1,0	1,1
REFR CYCLE	COMPRESSOR	MODEL		EG 75HLR	EG 75HLR	EG 75HLR
		START TYPE		AMPERIMETRIC RELAY		
		OIL TYPE		ISO 10		
		RESISTANCE AT +25ºC	AUXILIARY	7,1	43,10	10,35
			MAIN	2,8	10,35	
	EVAPORATOR			FLAP TUBE		
	CONDENSER			EXTERNAL		
	DRYING FILTER			MOLECULAR SIEVE (XH9 - 19g)		
	CAPILLARY PIPE			I.D. 0,75 x 2490mm		
ELECTRIC DETAILS	THERMOSTAT	CAPACITY		120 / 240 VAC FLA6 LRA 36		
		MODEL		TSV 5001-09		
	DEFROST THERMOSTAT (BIMETAL) N14 KSD 303A			OPEN AT 25ºC ± 3ºC CLOSE AT -6ºC ± 4ºC		
	DEFROST THERMAL FUSE	CAPACITY AND OPERATION TEMPERATURE		AC 250V / 10A		
				72ºC ± 4ºC		
	COMPRESSOR THERMAL PROTECTOR	CLOSING TEMPERATURE(ºC)		70 - 52	70 - 52	70 - 52
		OPENING TEMPERATURE (ºC)		110 - 120	100 - 110	100 - 110
	MOTORFAN	POTENCY (W)		8	8	8
		RESISTANCE (Ω) AT 25ºC		107	377	377
	DEFROST RESISTANCE	POTENCY (W)		255 ± 7,5	255 ± 7,5	255 ± 7,5
		RESISTANCE (Ω) AT 23ºC		57,9 - 70,3	180,8 - 210,9	180,8 - 210,9
	GUTTER RESISTANCE	POTENCY (W)		14	14	14
		RESISTANCE (Ω) AT 25ºC		1152 ± 5%	3457 ± 5%	3457 ± 5%
	LAMP POTENCY (W)			15	15	15
	DOOR SWITCH			250V / 0,5A		
	ELECTROMECHANIC TIMER (RESISTANCE) AT 25ºC			11.800Ω ± 2.360Ω	NOT MEASURABLE WITH A OMMETER	

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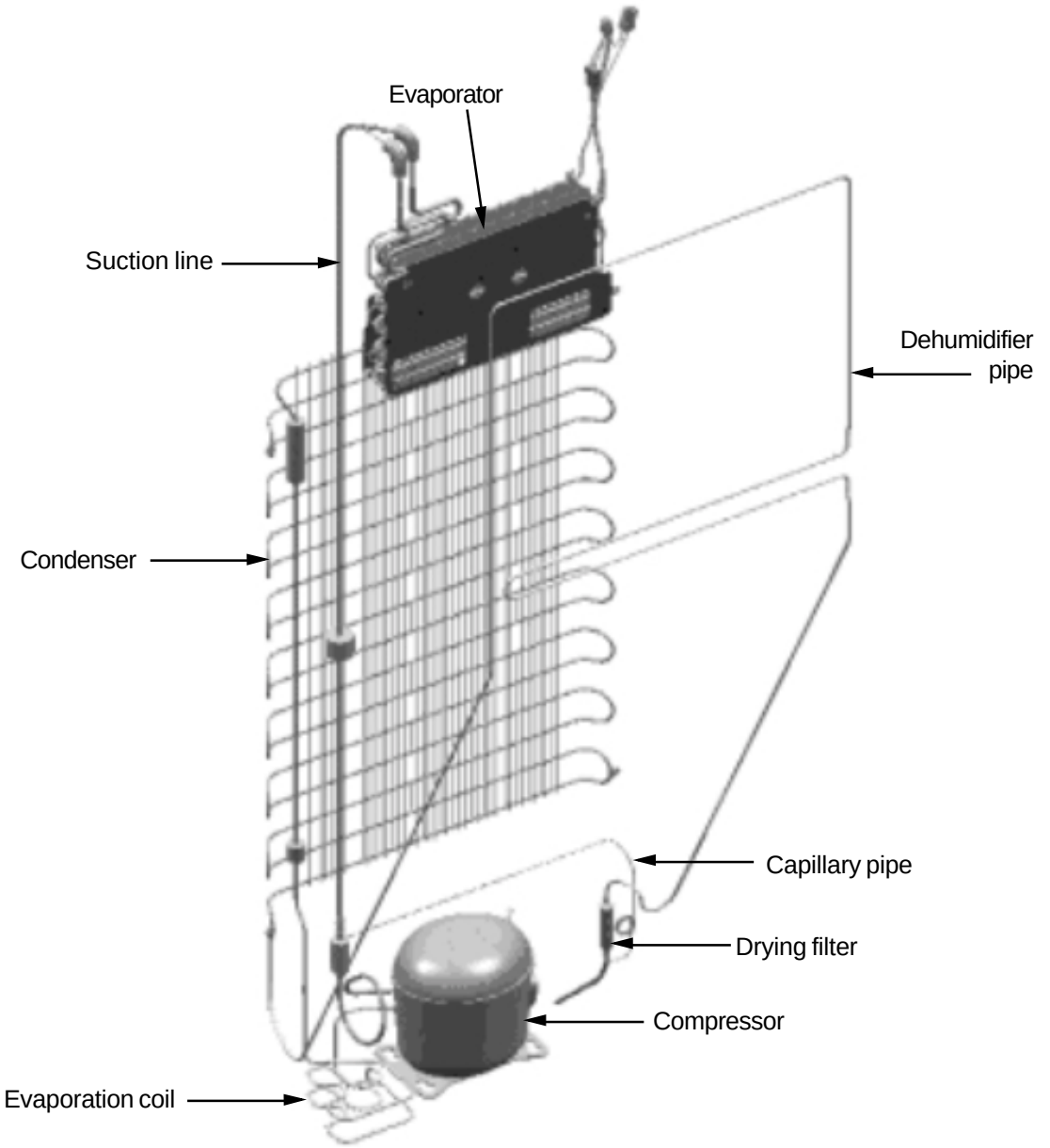
4. COOLING FLUID CIRCULATION SCHEMATIC DIAGRAM

Compressor – Evaporation Coil - Condenser – Dehumidifier Pipe – Drying Filter – Capillary Pipe - Evaporator – Suction Accumulator – Suction Line - Compressor



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5. COLD AIR FLOW SCHEMATIC DIAGRAM

The cold air generated in the evaporator is forced into the freezer compartment and into the refrigerator compartment by the motofan.

In the freezer compartment the cold air is distributed through the top flow to the shelves and the food is frozen by the cold air flow.

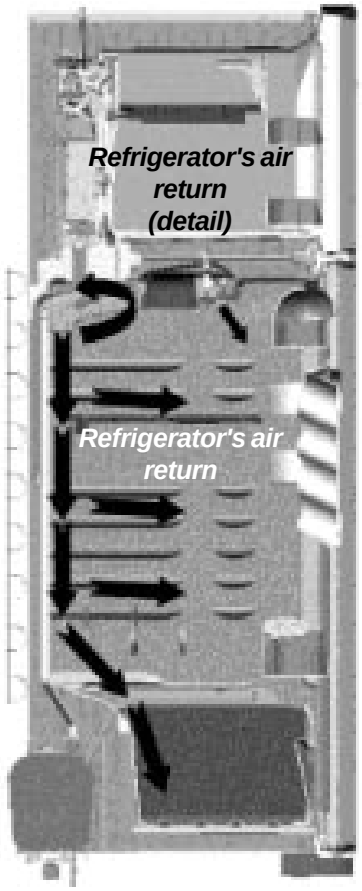
In the refrigerator compartment, the cold air flow coming from the evaporator is carried by the freezer's top flow passing through the manual damper that will control the amount (flow rate) of cold air that will be redirected to cool down the refrigerator compartment.

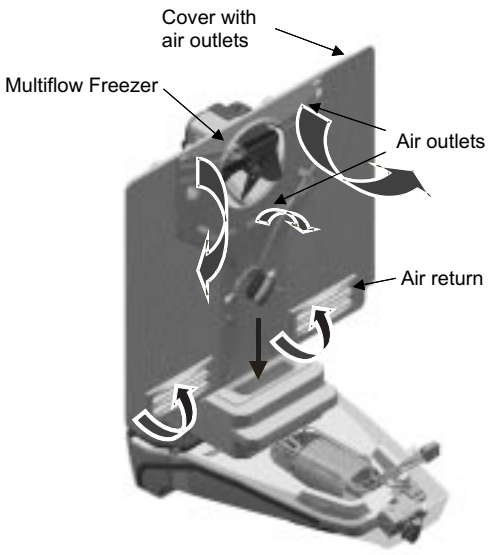
The manual damper has three positions:

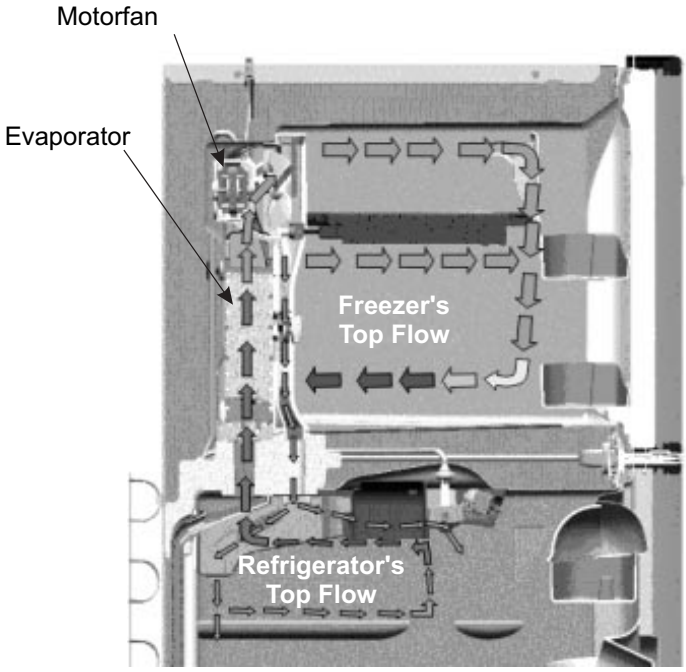
- **Maximum Refrigerator:** 80% of the air flow rate is redirected to the refrigerator implying in a faster cooling rate in the refrigerator compartment.
- **Normal:** 50% of the air flow rate is redirected to the refrigerator.
- **Maximum Freezer:** only 20% of the air flow rate is redirected to the refrigerator thus implying in a slower cooling rate in the refrigerator compartment.

After passing through the manual damper, the cold air flow will be carried through a space in the intermediary division between the freezer and the refrigerator compartments to the top flow duct of the refrigerator that will then uniformly distribute it through that compartment.

After cooling down the refrigerator compartment the air will return through the refrigerator's Top Flow back, which will direct it through another space in the intermediary division between the freezer and refrigerator compartments, to the freezer's evaporator.







Detail of Refrigerator's Air return

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6. OPERATION

The DF36 Electromechanical Frost Free refrigerator works under the vapor compression cycle R134-a. The vapor is compressed in the alternate compressor, release heath in the condenser, is restricted into the capillary pipe and absorbs heath in the flap tube evaporator, returning to the compressor as vapor through the suction line.

The cold air coming form the evaporator is forced by the motofan into the freezer and then conducted to the refrigerator through the freezer and refrigerator top flow ducts. The temperature control in the refrigerator is done with the help of an electromechanical thermostat located inside the top flow of this compartment which, in accordance to the temperature, varies its diaphragm turning off or on the power for the compressor, timer, and evaporator motofan.

The temperature in the freezer compartment depends on the thermostat localized inside the refrigerator compartment which will be controlling the temperature of that compartment. As the refrigeration need of the refrigerator compartment is greater than the one of the freezer compartment, having the temperature control located in the refrigerator compartment guarantees that the freezer will always be operating in an adequate temperature (below -18°C).

A greater refrigeration speed between the both compartments can be controlled through the mechanical damper localized in the freezer's top flow, which has three possible, adjust positions: maximum refrigerator, normal, and maximum freezer.

6.1 Defrost

After cooling for some time, all the humidity introduced inside the product by the stored food, or by the opening of the doors, will be retained in the evaporator and will gradually freeze. At that point, it will be necessary to remove this ice in excess accumulated on the surface of the evaporator, through a defrost operation.

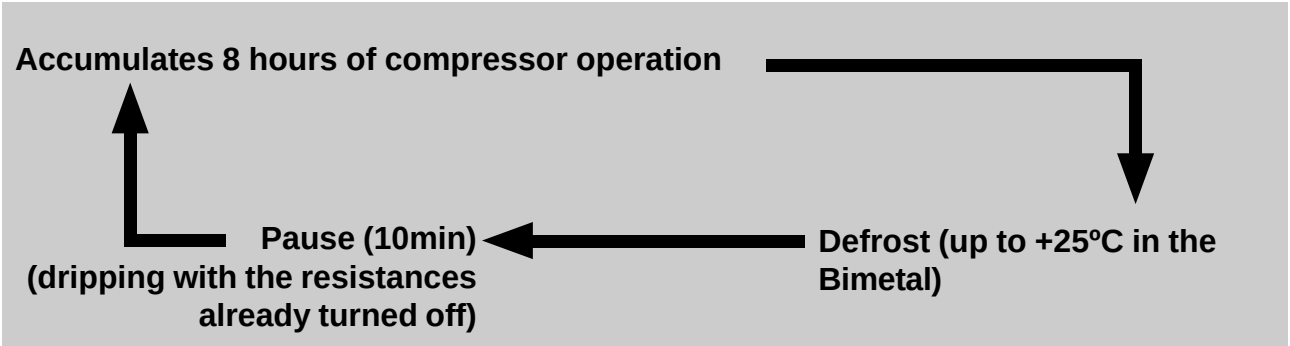
The product has a defrost resistance fixed to the evaporator and another resistance fixed to the defrost drain gutter, localized in the refrigerator's top flow, so as to prevent the freezing of the gutter thus facilitating the draining of the water resulting from the defrost that comes from the evaporator. The evaporator and the gutter resistances' are connected in parallel.

During the defrost operation, the compressor, the motofan and the timer will remain turned off.

The resistances are turned on by the timer, with the monitoring of the defrosting end being done by the defrost thermostat (bimetal). There is a thermal security fuse positioned in the up right side of the evaporator.

Note: *The thermal fuse works in the case of a failure in one of the other circuits thus avoiding the defrost resistance to heat too much. In case the thermal fuse is used it will be spoiled. Before replacing that component, it's mandatory that the problem that led to its use should have been identified and fully corrected. The product must never be turned on without the thermal fuse being correctly installed.*

6.1.1 Defrost Bimetal registering a temperature equal to or above +25°C (±3°C) when the refrigerator is turned on:


Accumulates 8 hours of compressor operation
Defrost (up to +25ºC in the Bimetal)
Pause (10min)
(dripping with the resistances already turned off)

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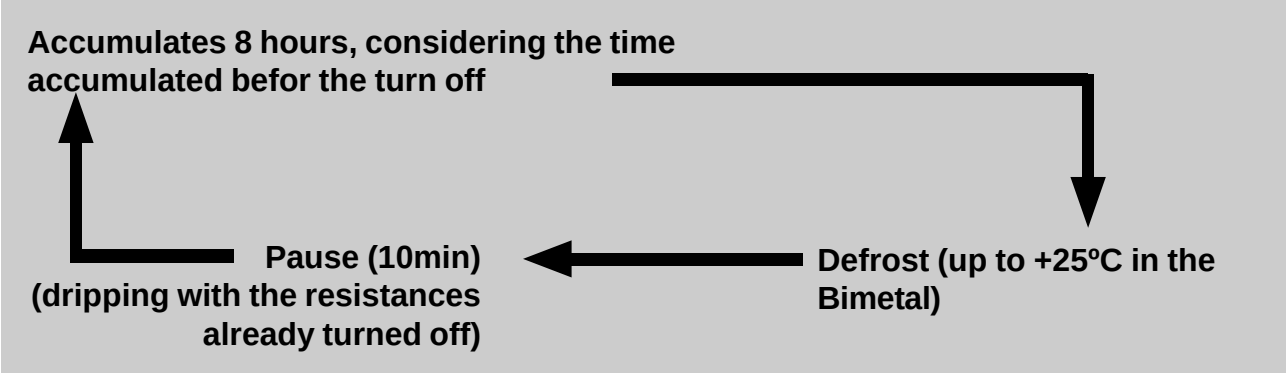
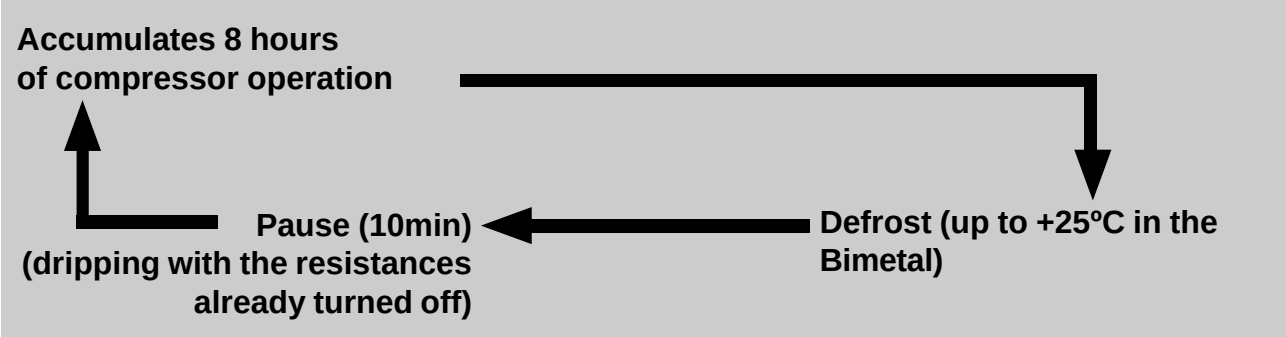
6.1.2 Defrost Bimetal registering a temperature less than -6°C (±4°C) when the refrigerator is turned on (in the case of a power failure happening before the product has achieved a temperature above +25°C (3°C) in the defrost bimetal).


Accumulates 8 hours, considering the time accumulated befor the turn off
Defrost (up to +25ºC in the Bimetal)
Pause (10min) (dripping with the resistances already turned off)

6.1.3 During the continuous operation of the refrigerator


Accumulates 8 hours of compressor operation
Defrost (up to +25ºC in the Bimetal)
Pause (10min) (dripping with the resistances already turned off)

6.2 Compensation in Case of Power Failure
In case of power failure, the product will behave according to the following conditions once the power returns.

6.2.1 Defrost Bimetal registering a temperature equal to or above +25°C
The product will restart operation according to the procedure in item 6.1.1.

6.2.2 Defrost Bimetal registering a temperature lesser than -6°C
The product will preserve the same adjustment configuration it has before the power failure. The defrost will happen according to item 6.1.2.

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LÍDER MUNDIAL EM ELETRODOMÉSTICOS

SERVICE MANUAL

REFRIGERATOR DF36

MODULE II

ASSEMBLING AND DISASSEMBLING OF THE REFRIGERATOR/FREEZER

REVISION 0

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1. TOOLS AND EQUIPMENT REQUIRED FOR THE PRODUCT MAINTENANCE

- Digital multimeter plier (Minipa ET 3200 A)
- Curved-noose plier
- Pipe-cutting plier (LRSZ –VULCAN))
- Cutting plier
- Lokring plier (VULCAN)
- Lockring joints 8 to 6, aluminum - copper
- Screwdriver 1/4 x 6”
- Phillips screwdriver 3/16 x 6"
- Torx tools set
- Digital Multimeter
- Thermal-hygrometer (SUNDO)
- Digital Thermometer with 4 sensors (Full Gauge)
- Lokprep sealant

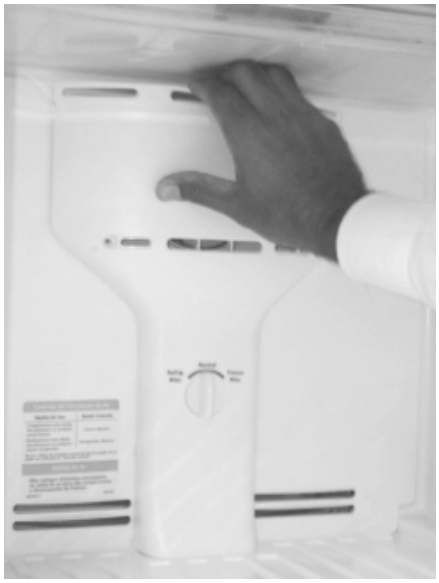
2. PRODUCT DISASSEMBLING

2.1 Access to the Freezer Components

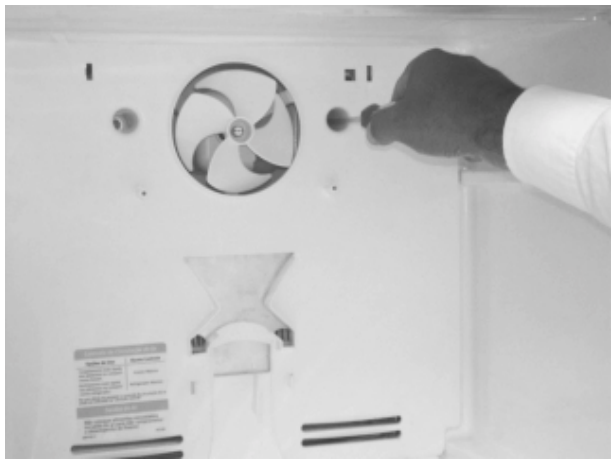
2.1.1 Remove all the freezer accessories.

2.1.2 With a Phillips screwdriver, remove the top flow screws.

2.1.3 Remove the top flow assemblage by pulling it from the top.



2.1.4 With a Phillips screwdriver, remove the two screws so as to loose the cover.



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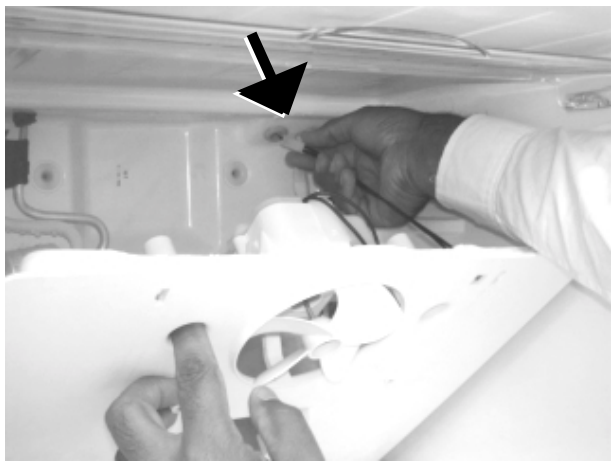
2.1.5 Pull the cover as shown in the image below and disconnect the motofan.

2.1.6 Disconnect the motofan thermostat – it has a locking connector that should be pressed so as to be released.



Note.: *The removal of this cover can be hindered if the product is cold since then the ice can stuck it to the evaporator. Await a few minutes to remove the cover.*

2.1.7 To assemble the components above just follow the assembling sequence backwards, with special care in relation to:
- the proper positioning of the components,
- the correct connection of the electrical terminals.

2.2 Access to the Refrigerator Components

Remove the refrigerator compartment shelves, pulling them to the front until they stop. Raise them and pull them out.

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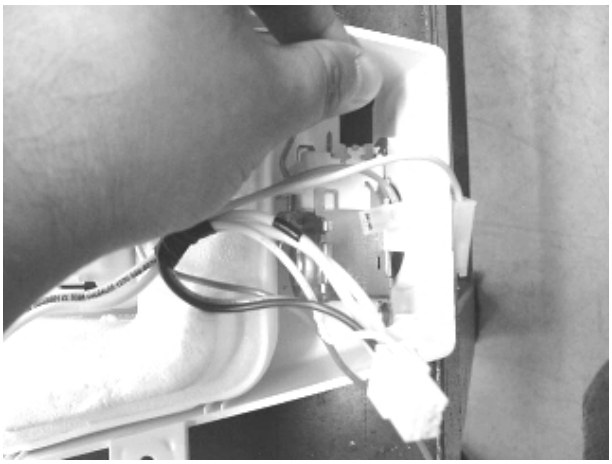
2.3 Removal of the Top Flow Assemblage

To remove the top flow assemblage located on the top of the refrigerator compartment, you should remove the two Phillips screws and carefully loose the assemblage from its supports in the back of the internal box. To finally remove the assemblage, unplug the six ways connector releasing its security lock.

2.4 Removal of the Air Duct and Gutter

To remove the air duct, unplug the terminals of the thermostat and the light bulb, unlock the gutter from the top flow cover and pull the air duct up (see images bellow and on the next page).



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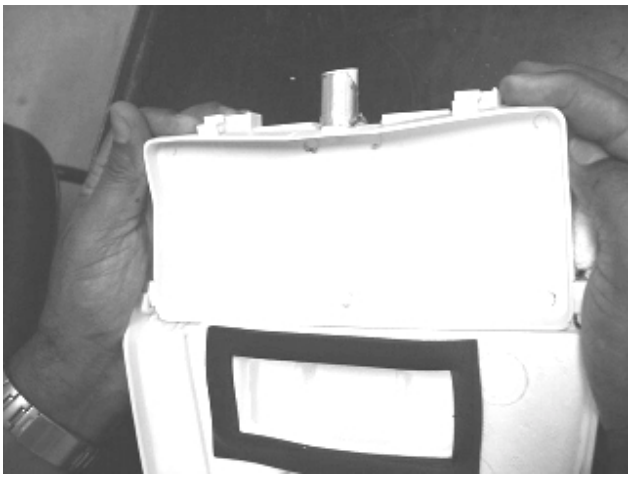
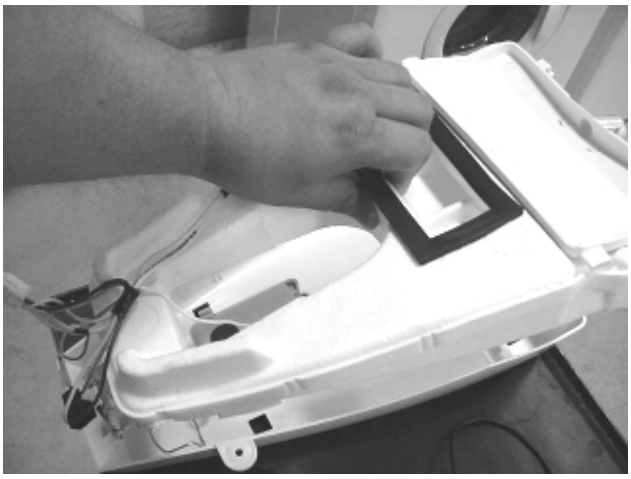
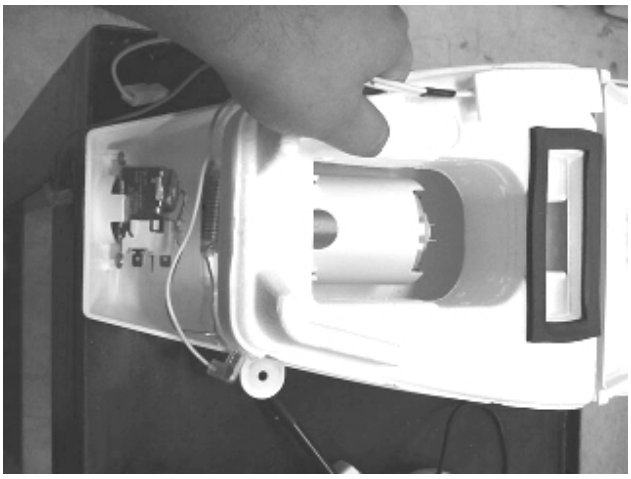
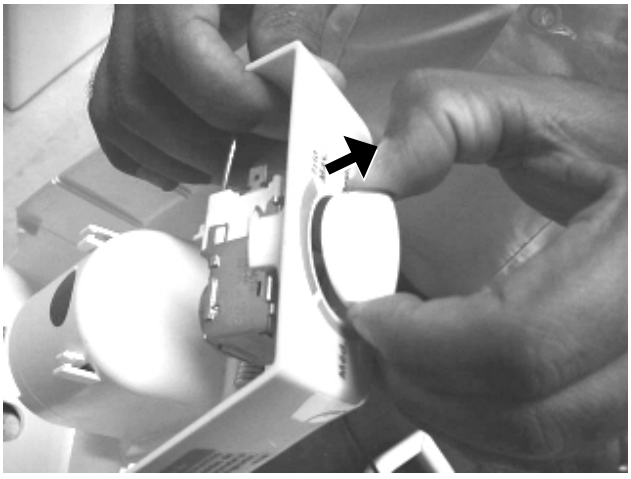


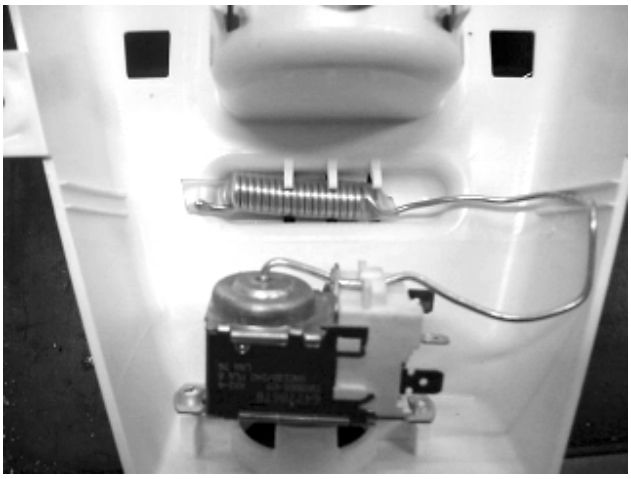


2.5 Removal of the Thermostat

Remove the air duct and pull the thermostat button out of the top flow. Release the thermostat from the fasteners that hold its body and spiral bulbous from the top flow casing.







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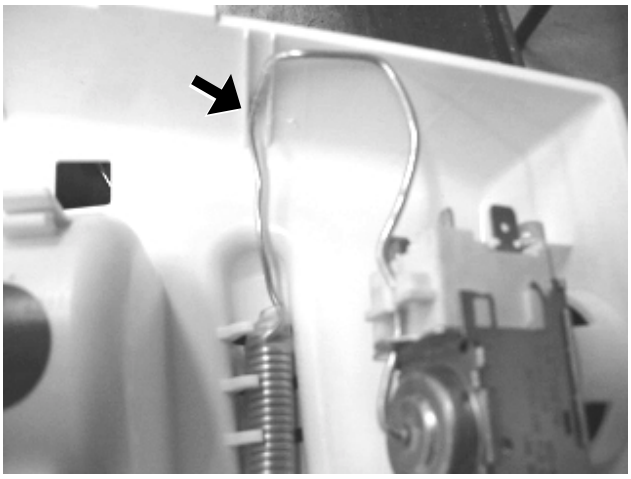
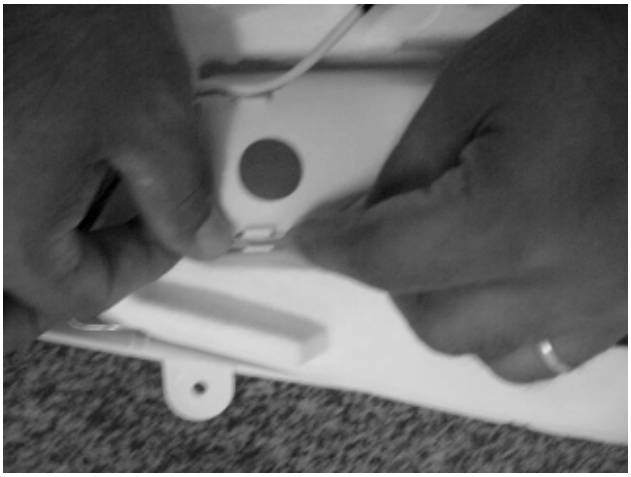
Note: *when replacing the thermostat by a new one, please pay attention to the bulbous fastening to the vertical groove on the top flow cover, locking the spiral bulbous in the casing.*





Attention: *do not remove the plastic coat that covers the bulbous.*

2.5.1 To replace the gutter resistance with the internal net, detach the ribbon that fixes the net to the air duct and release the top flow internal net from the fasteners.

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2.6 Disassembling of the Door Handle

2.6.1 With the help of a screwdriver, remove the handle cover applying pressure from below so as not to scratch the surface. Pull the cover to the front, releasing it.

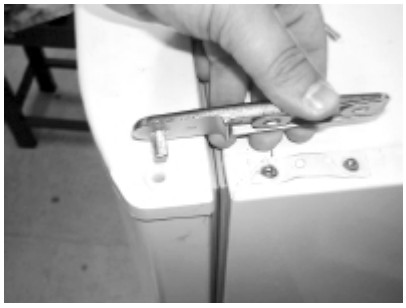
2.6.2 With the help of a Torx T30 tool, remove the screw and release the handle pulling it to the left to release the lock, and then to the front.

2.6.3 To assemble the door handle, please follow the same sequence previously described backwards.

Note: *whenever necessary to replace the handle, it's also recommended to replace the handle cover since it can be damaged during the removal.*

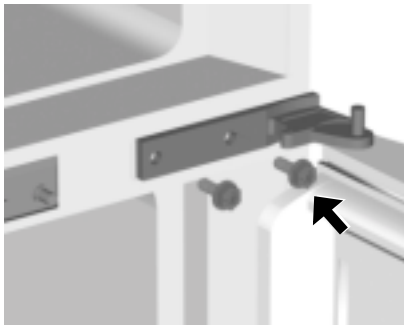
2.7 Removal of the Doors

2.7.1 Using a 1/4 x 6" Phillips screwdriver, loosen the two screws of the top hinge, and then lift the front part of the hinge so as to unfit it.



2.7.2 Carefully remove the freezer door, lifting and unfitting it from the intermediary hinge. Be careful not to lose the support plastic washer.

2.7.3 Using a T30 Torx tool, remove the intermediary hinge loosening its screws.



2.7.4 Remove the refrigerator door, lifting it and unfitting it from the bottom hinge.

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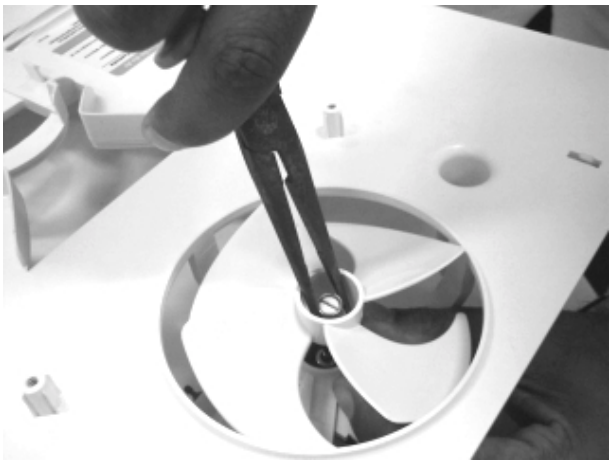
2.8 Replacement of the Motofan

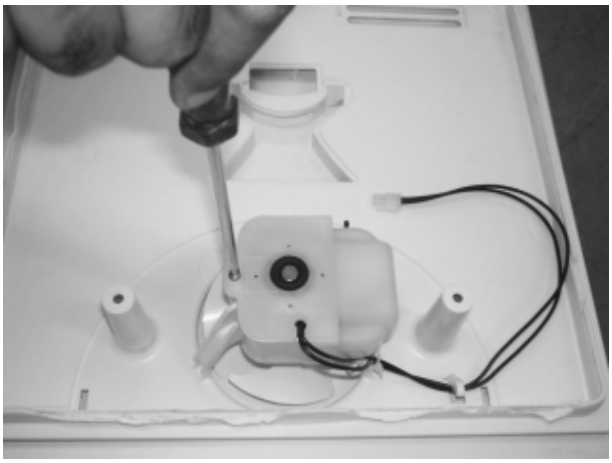
2.8.1 Follow the procedure described in item 2.1, *Access to the Freezer Components.*

2.8.2 With a cutting pliers, cut the fasteners that fix the motofan net on the evaporator cover.

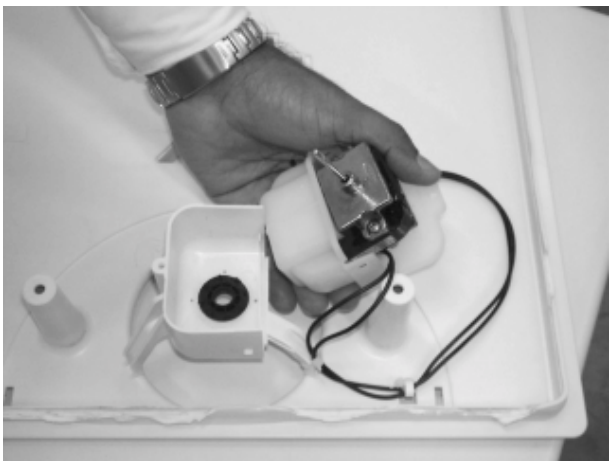
2.8.3 With a needle-nose pliers, remove the propeller lock so as to release the propeller.

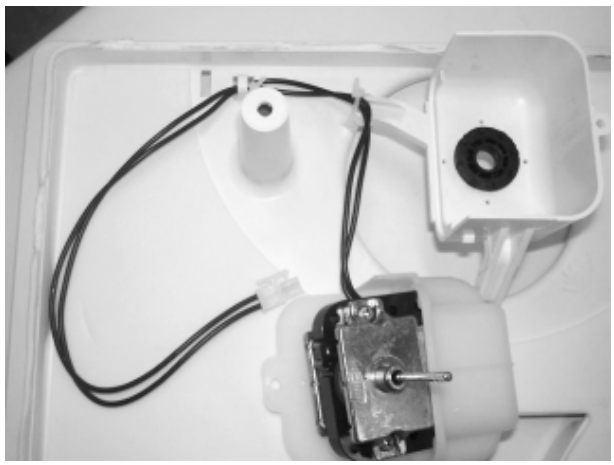


2.8.4 Remove the Phillips screw from the motofan cover and, with the help of a screwdriver, release the locks.



2.8.5 Remove the motofan motor.





To re-assemble the motofan assemblage, please follow the same procedure backwards, using new fasteners to fix the electric cabling to the evaporator cover. Make sure that the motofan axle seals are correctly positioned.

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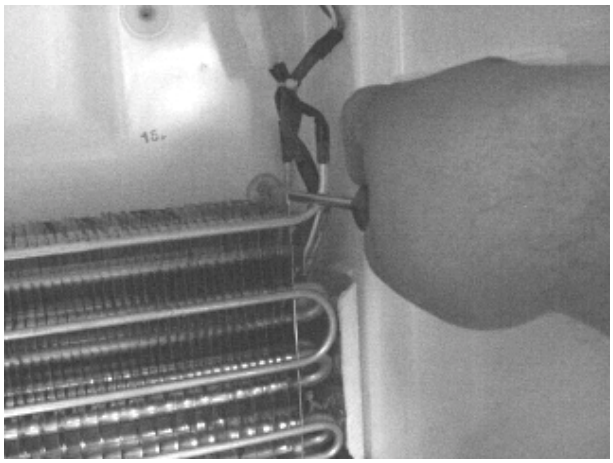
2.9 Disassembling of the Evaporator (bimetal, thermal fuse and defrost resistance replacement)

Evaporator Replacement (procedure for products outside the warranty period)

2.9.1 Follow the procedure described in item 2.1, Access to the Freezer Components.

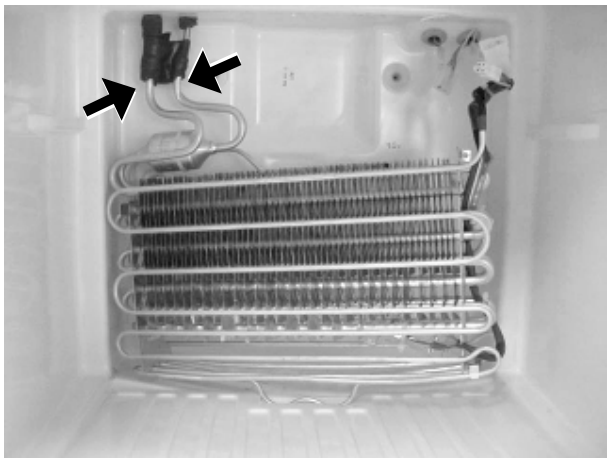
2.9.2 Loosen the two Phillips screws that fix the evaporator to the internal box.



Attention:
Be careful not to drop the screws in the gutter bellow the evaporator or in the damper duct.
If anything falls into one of these two components, it should be necessarily removed so as to preclude any operation failures with the product.

2.9.3 Collect the cooling gas (in case there is any in the unit).

2.9.4 Remove the rubber shock absorber form the suction line and, with the help of a LRSZ pliers, cut the pipes of the suction and the capillary lines next to the lockring ring.



2.9.5 Put the anaerobic Lokprep sealant in the suction/capillary lines pipes and in the entry and exit accesses of the evaporator.

2.9.6 Use the lockring joint to connect the evaporator pipe to the suction/capillary line. Uphold the evaporator to assure a pre-assembling with the joints.

2.9.7 With the help of a lockring pliers, close the lockring joints.

2.9.8 Pressurize the system with 120 lbf/pol^2 so as to check if there are any leaks in the joints or in the accessible parts of the sealed unit.

2.9.9 No leaks being observed, re-operate the sealed unit.

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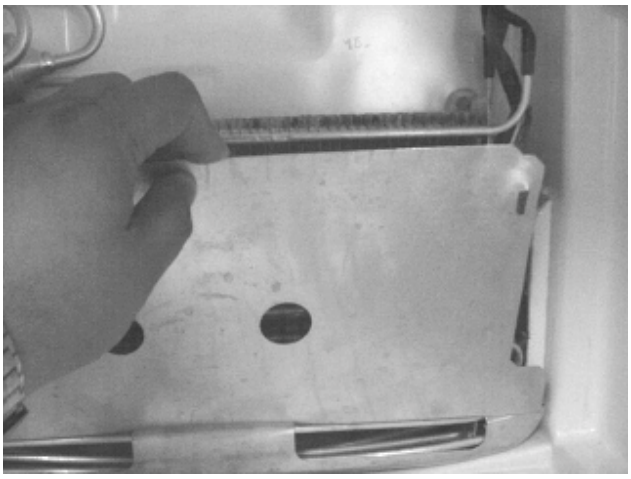
2.9.10 To remove the Reflecting Gutter:

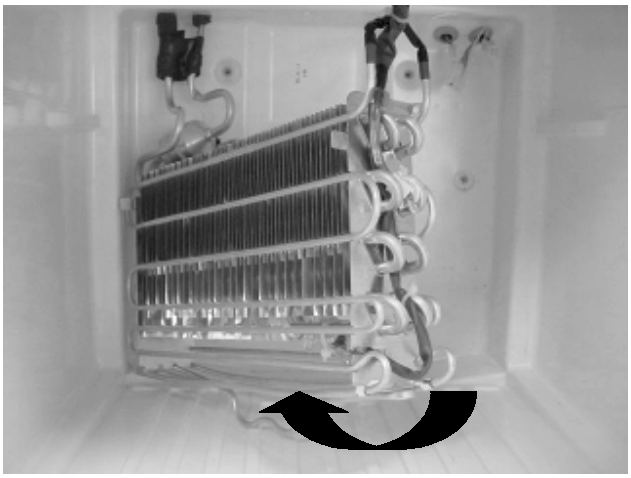
• Unplug the connectors of the fuse-bimetal circuit and the resistance.

• Pull the evaporator locks to release the reflecting gutter.

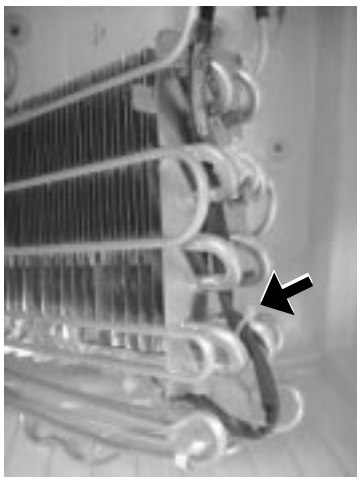


2.9.11 To replace the fuse-bimetal circuit:

• Carefully turn the evaporator from the right to the left, as shown in the picture bellow.



• Using a cutting pliers, remove the four plastic fasteners that fix the fuse-bimetal circuit to the evaporator.



INSTALL THE NEW FUSE-BIMETAL CIRCUIT TAKING CARE TO POSITION IT THE SAME WAY THE ORIGINAL CIRCUIT WAS POSITIONED. FIX THE NEW CIRCUIT WITH PLASTIC FASTENERS CUTTING OFF THE EXCESS.

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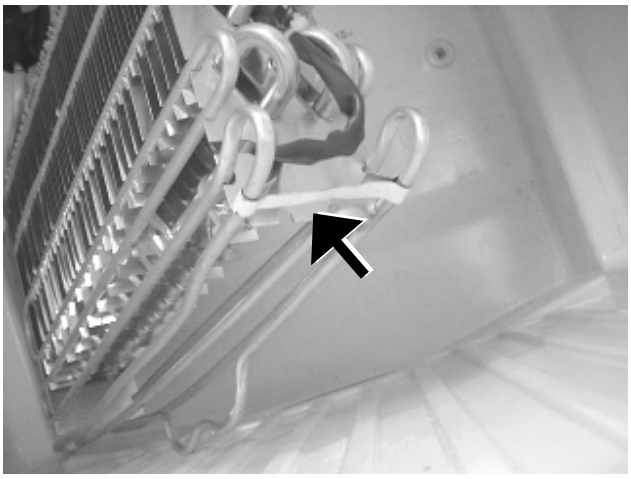
2.9.12 To replace the defrost resistance:

• Release the metal fastener that fixes the resistance under the evaporator.

• Release the resistance from the evaporator fittings.

To install a new resistance, fit it in the evaporator fittings and then fix it with the metal fastener.



2.10 Removal of the Timer

2.10.1 With the help of a Phillips screwdriver, loosen the screw that fixes the box which contains the timer.

2.10.2 Carefully remove the box, unfitting it from the internal lateral side of the cabinet.

2.10.3 With a screwdriver, loosen the three fixing locks in the box so as to have access to the timer. To remove the timer, just remove the three screws fixing it to the box.

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Customer Care Center
Elaboration: Service Engineering
July/2004
Revision 0

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Electrolux

LÍDER MUNDIAL EM ELETRODOMÉSTICOS

SERVICE MANUAL

REFRIGERATOR DF36

MODULE III

ELECTRICAL COMPONENTES TESTING

REVISION 0

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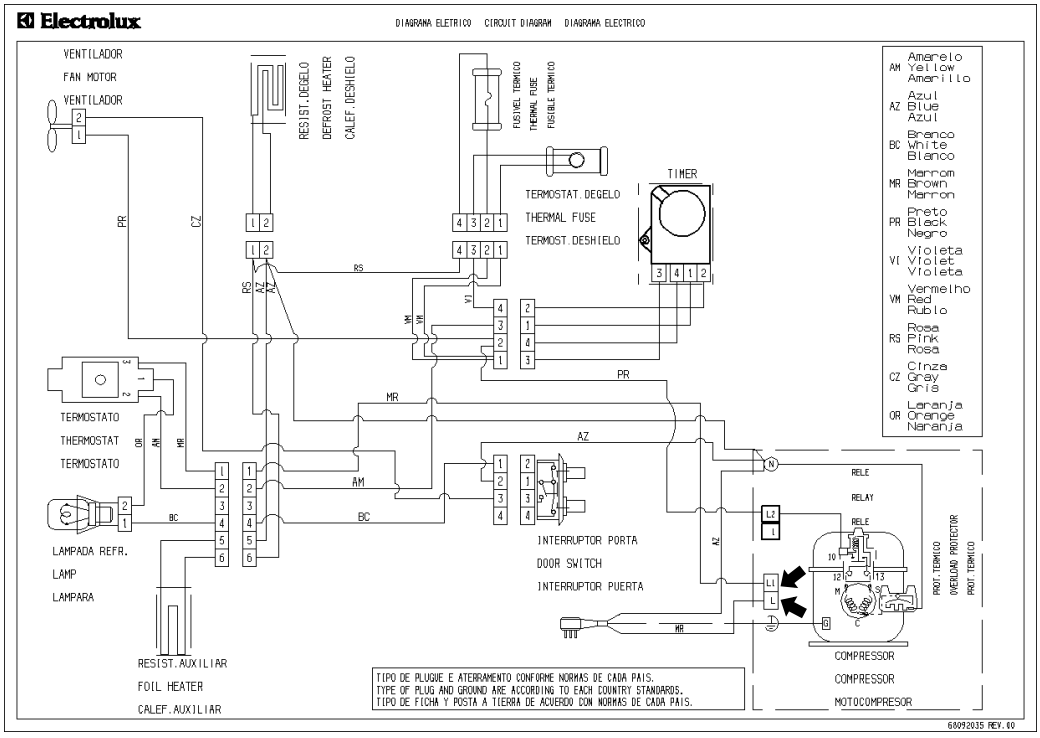
1. TESTING PROCEDURES

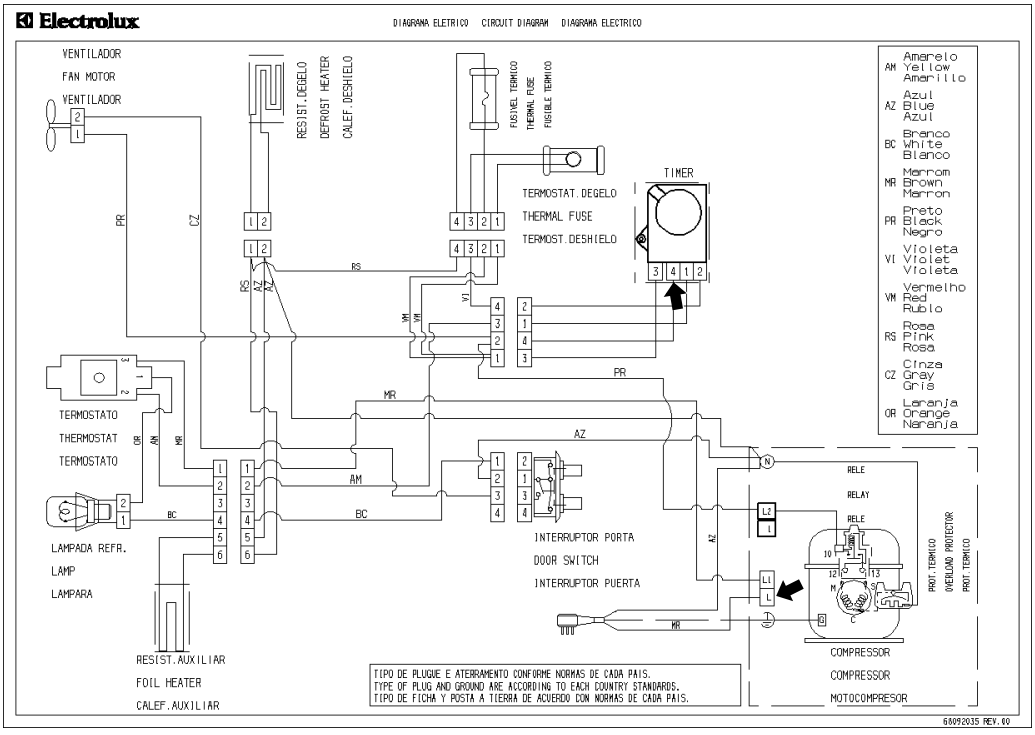
1.1 How to know if the board is energized

With the help of the digital multimeter, measure the alternate tension (127V or 220V) between the brown and blue wire terminals of the compressor, as indicated in the scheme below:



1.2 Operation of the compressor and motofan

The control of the operation of the compressor and the motofan is done by the thermostat and timer. After the product is connected to the mains, verify if there is alternate tension (127V or 220V) between the brown and blue wire terminals and the pin 4 of the timer connector.



Note: *The motofan and the compressor operate both, simultaneously. The motofan is turned off by the doors switches when any one of them is opened.*

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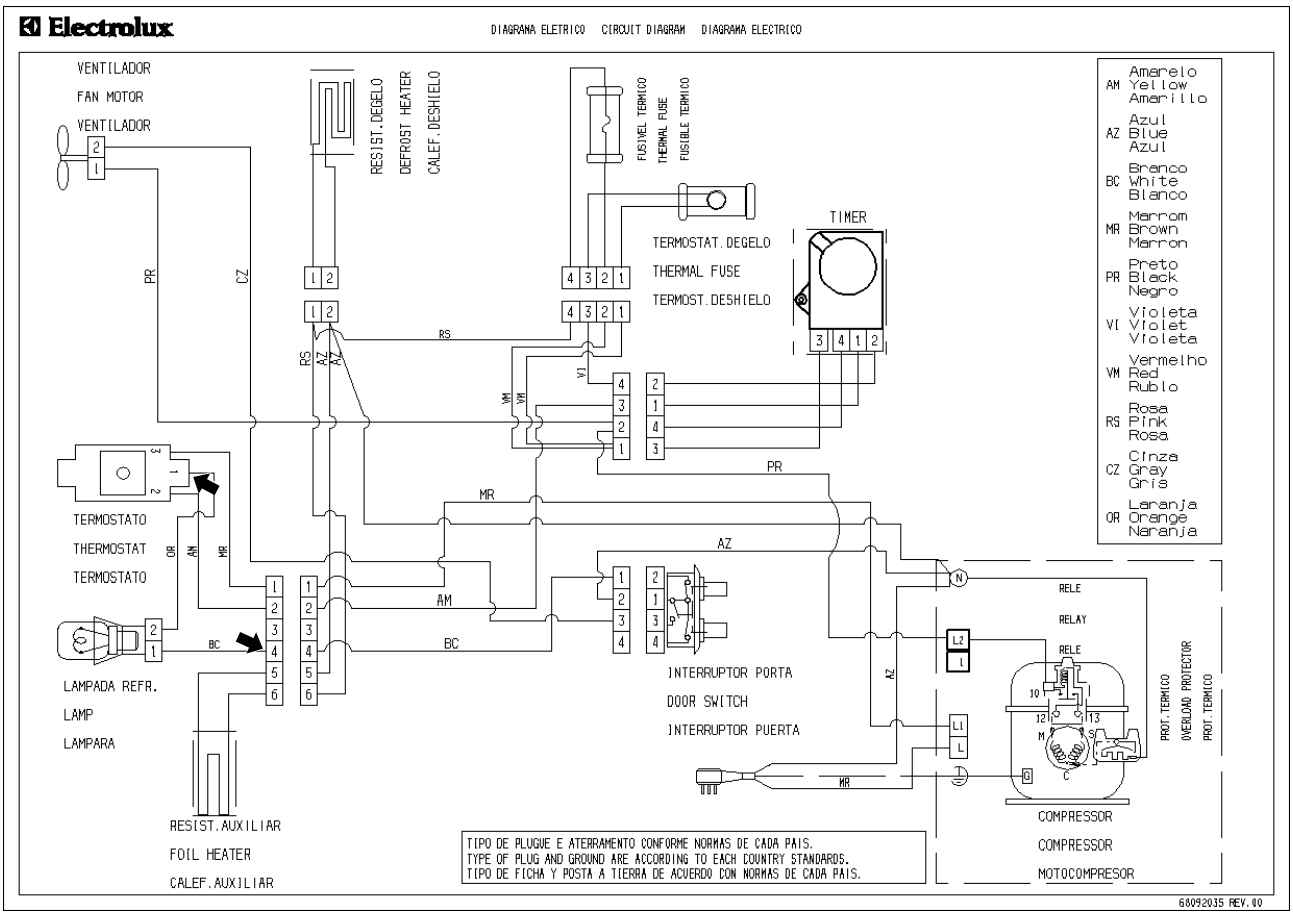
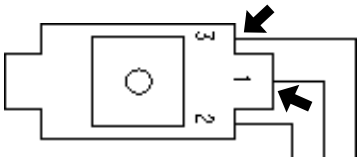
1.3 Operation of the bulbs

To verify the proper operation of the bulb, measure the alternate tension (127V or 220V) between the terminal 1 of the thermostat and the terminal 4 of the multi-way connector of the refrigerator top flow.



➔ Thermostat test

With the thermostat in the turned on position, it should have been continuity between the terminals **1** and **3.** If there is no continuity, the thermostat must be replaced.



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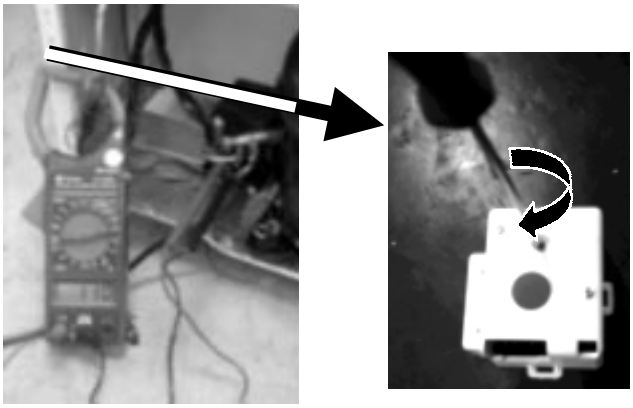
1.4 Operation of the defrost system
To check the operation of the product defrost system the steps bellow should be followed:

1.4.1 Forced Defrost
With the help of a screwdriver, turn the timer mechanism in the clockwise sense until you hear the first click, so as to manually advance it to the defrost position. At this point, a change occurs in the timer contacts going from 1-4 to 1-2, turning off the product compressor.



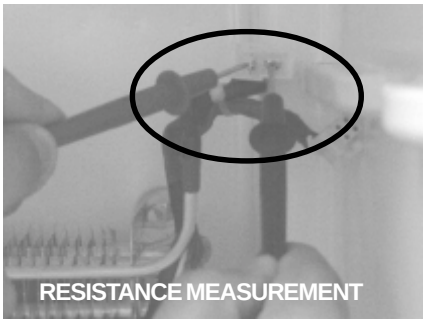
1.4.2 Verify if there was change of the timer contacts which provide energy for the resistances.
Now, there should be alternate tension (127 or 220V) between the contacts **1-2** of the timer.
The freezer temperature being bellow -6 ± 4°C, there will be current feeding the defrost and gutter resistances, which are connected in parallel.
At this point, the timer motor stops, because being serially connected to the resistances it has an elevated impedance (approximately 16.000) in relation to the parallel value between the resistances. The current that flows through the circuit tend to follow the path with lesser resistance.
The defrost operation is monitored by the bimetallic defrost thermostat. When the temperature achieves +25 ± 3 °C in the thermostat, its contact opens interrupting the current being passed to the resistances. At this point, the timer motor is energized again, resuming operation and turning the timer mechanism for 10 minutes. During this period of time, the product is still with contacts **1-2** on and the motofan, resistances and the compressor are turned off. We call this 10 minutes period of **dripping time.** After this period of time, there is a change in the timer contacts to **1-4,** activating the compressor if the refrigerator thermostat is requiring its activation.

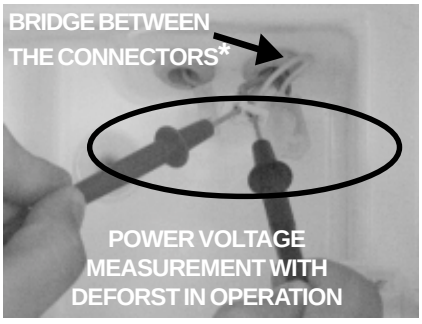
1.4.3 Checking the resistances with forced defrost

➔ **Defrost Resistance**

Disconnecting the freezer evaporator defrost resistance male connector, using the resistance scale of the multimeter, it is possible to verify its resistance value in ohms (see the table bellow for comparison values).
In the resistance female connector located in the cabinet, it is possible to measure the alternate tension127V or 220V), if the defrost is activated, according to the procedure described above. If there is tension in this connector, that means that the thermal fuse and the defrost thermostat are allowing the defrost operation.
térmico e o termostato de degelo estão permitindo a operação de degelo.

OHMIC RESISTANCE OF THE DEFROST RESISTANCE AT +23ºC	FOR 127V	FOR 220V
	57,9 to 70,39	180,8 to 210,9





**** Attention:*** The bridge (pink wire) between the evaporator resistance and the bimetal-fuse connectors should present continuity between them, otherwise there won't be current to feed the defrost resistance.

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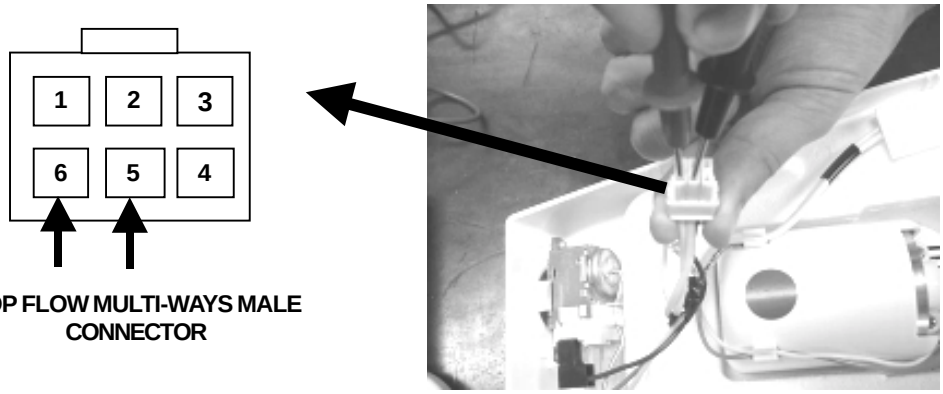
➔ Gutter Resistance

In the multi-way connector, located in the refrigerator top flow, it is possible to measure the ohmic resistance the tension of the current being fed to the gutter resistance.

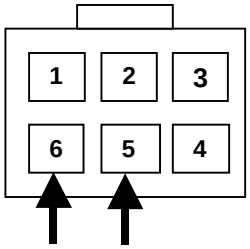
1. In the refrigerator top flow male connector, measure the value of the ohmic resistance of the gutter resistance positioning the probing needles of the multimeter, already set to the resistance scale, on the terminals **5-6**.

OHMIC RESISTANCE OF THE GUTTER RESISTANCE AT +23ºC	FOR 127V	FOR 220V
	1094 to 1210	3284 to 3630



TOP FLOW MULTI-WAYS MALE CONNECTOR

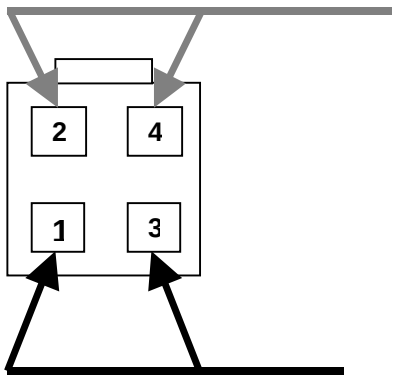
2. In the top flow female connector, next to the cabinet, it will be possible to measure the alternate tension (127V or 220V) of the current being fed to the gutter resistance on terminals **5-6**, while the product is defrosting.



TOP FLOW MULTI-WAYS FEMALE CONNECTOR

1.4.4 Checking the thermal fuse and the defrost thermostat

With the digital multimeter adjusted to the continuity scale, check the thermal fuse and bimetal thermostat connector for the following points:



IN **TERMINALS 2-4** THERE SHOULD BE **CONTINUITY** TO GUARANTEE THE PROPER OPERATION OF THE THERMAL FUSE.

THERE SHOULD BE **CONTINUITY** BETWEEN **TERMINALS 1-3** IF THE TEMPERATURE IN THE BIMETAL DEFROST THERMOSTAT IS **BELOW -6°C WITH A VARIATION OF ±4°C.**

THERE WON'T BE CONTINUITY BETWEEN **TERMINALS 1-3** IF THE TEMPERATURE IN THE BIMETAL DEFROST THERMOSTAT IS **ABOVE +25°C WITH A VARIATION OF ±3°C.**

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2. ELECTRICAL COMPONENTS TESTING PROCEDURES

2.1 Compressor

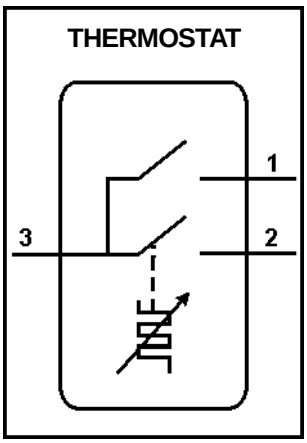
Measure the terminals (C, S e R) with the digital multimeter set to the lesser scale of ohmic resistance, with the compressor at 25°C.

	127V/60Hz	220V/50-60Hz
Between R and C	2,8	10,35
Between S and C	7,1	43,1
Between S and R	9,9 approx.	53,5 approx.

2.2 Thermostat

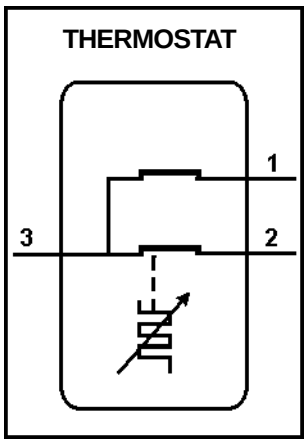
Measure, with the help of the digital multimeter set to the continuity scale, the thermostat disconnected from the mains.

Thermostat in the off position



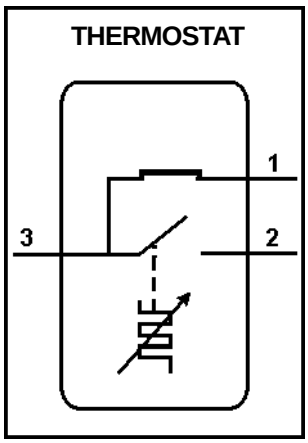
There is no continuity between pins 3-2, and 3-1.

Thermostat in the on position



There is continuity between pins 3-2, and 3-1.

Thermostat turned off by temperature



There is continuity between pins 3 and 1.
There is no continuity between pins 3 and 2.

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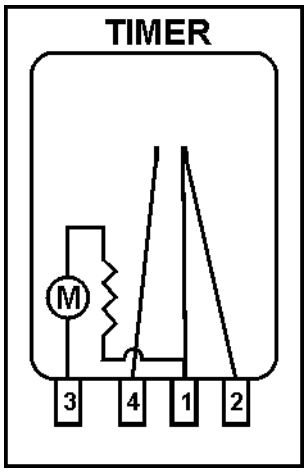
2.3 Timer

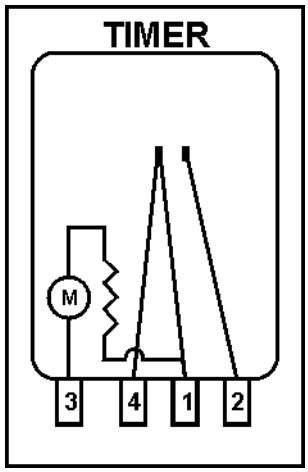
With the timer disconnected from the mains, measure with the help of the digital multimeter set to the continuity scale. Turn the timer cam with the help of a screwdriver until hearing the first click and then measure.

Timer at defrost



There is continuity between pins 1 and 2.
There is no continuity between pins 1 and 4.
Turn the timer cam with the help of a screwdriver until hearing the first click and then measure.

Timer turning on the compressor / motofan

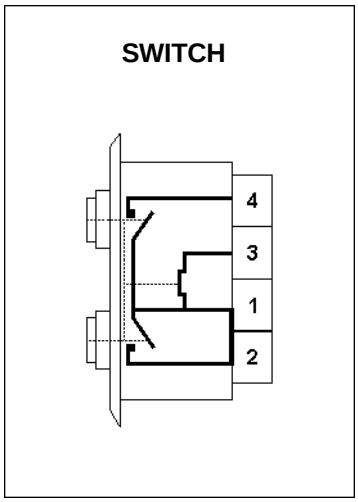


There is continuity between pins 1 and 4.
There is no continuity between pins 1 and 2.
With the timer disconnected from the mains, measure the timer motor with the digital multimeter set to the ohmic resistance scale.

2.4 Switch test

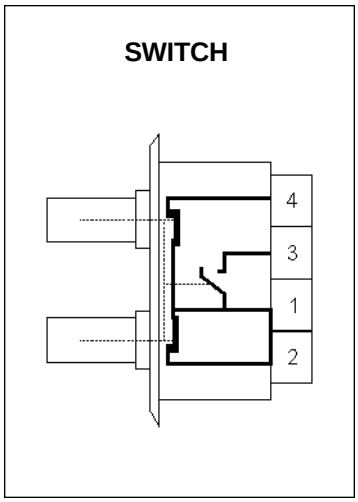
With the switch disconnected from the mains. Check with the help of the digital multimeter set to the continuity scale, the following points:

Switch with the two doors closed.



There is continuity between pins 1 and 3.
There is no continuity between pins 1 and 4, 1 and 2

Switch with the two doors open.



There is continuity between pins 1 and 2, and 1 and 4.
There is no continuity between pins 1 and 3.

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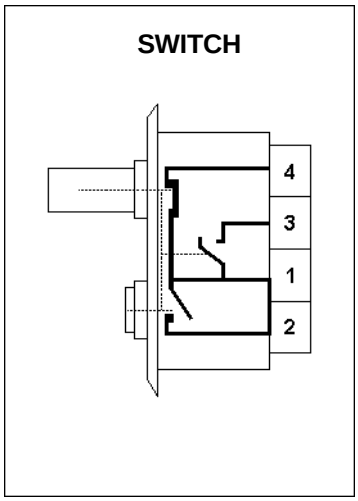
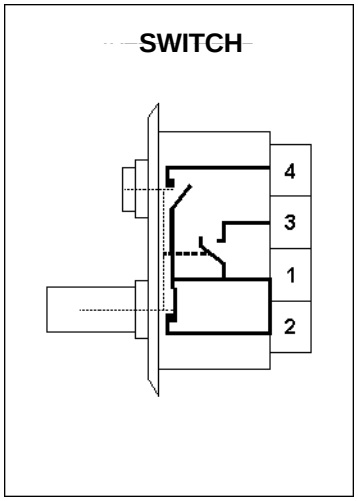
Switch with the freezer door open.



There is continuity between pins 1 and 4.
There is no continuity between pins 1 and 3, 1 and 2.

Switch with the refrigerator door open.

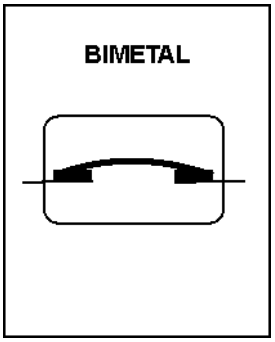


There is continuity between pins 1 and 2.
There is no continuity between pins 1 and 3, 1 and 4.

2.5 Bimetal test

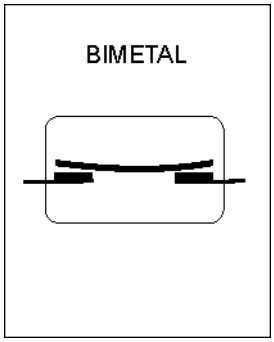
With the bimetal disconnected from the mains, using the digital multimeter set to the continuity scale to measure the following points:

Bimetal wih closed contacts



The bimetal will show continuity between its terminals if it is exposed to temperatures bellow -6°C, within a variation of ± 4°C from that reference value.

Bimetal with open contacts



The bimetal will not show continuity between its terminals if it is exposed to temperatures above +25°C, within a variation of ± 3°C from that reference value.

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LÍDER MUNDIAL EM ELETRODOMÉSTICOS

SERVICE MANUAL

REFRIGERATOR DF36

MODULE IV

ELECTRIC DIAGRAMS

REVISION 0

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2. SCHEMATIC DIAGRAM 4

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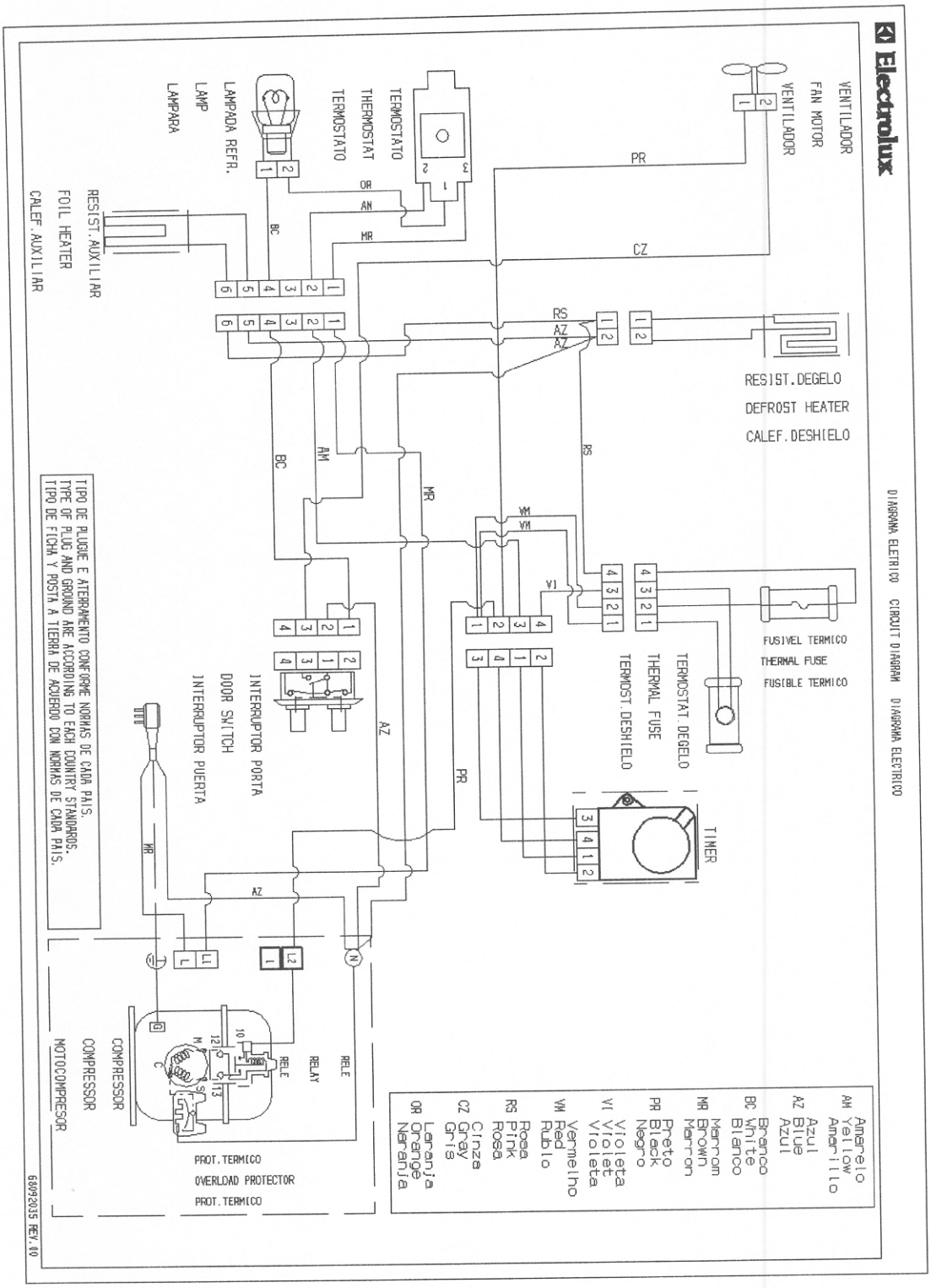
1. ELECTRIC DIAGRAM



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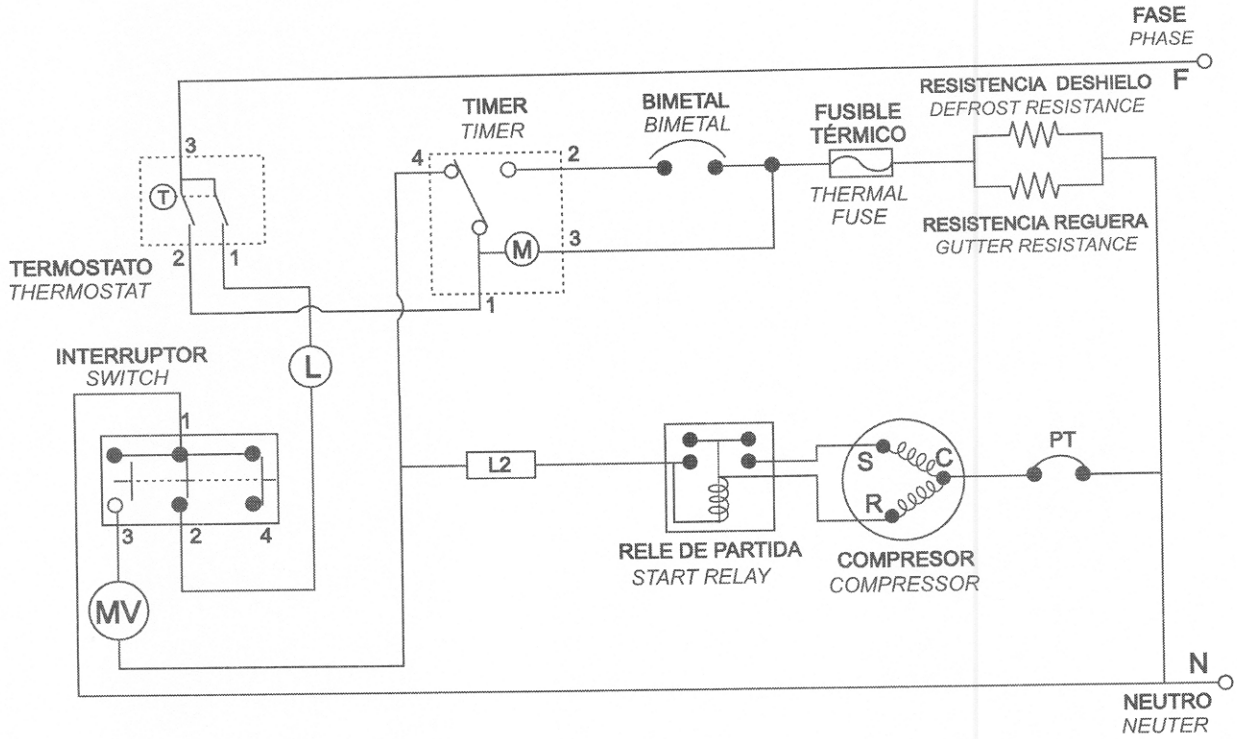
2. SCHEMATIC DIAGRAM



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SERVICE MANUAL

REFRIGERATOR DF36

MODULE V

TROUBLESHOOTING

REVISION 0

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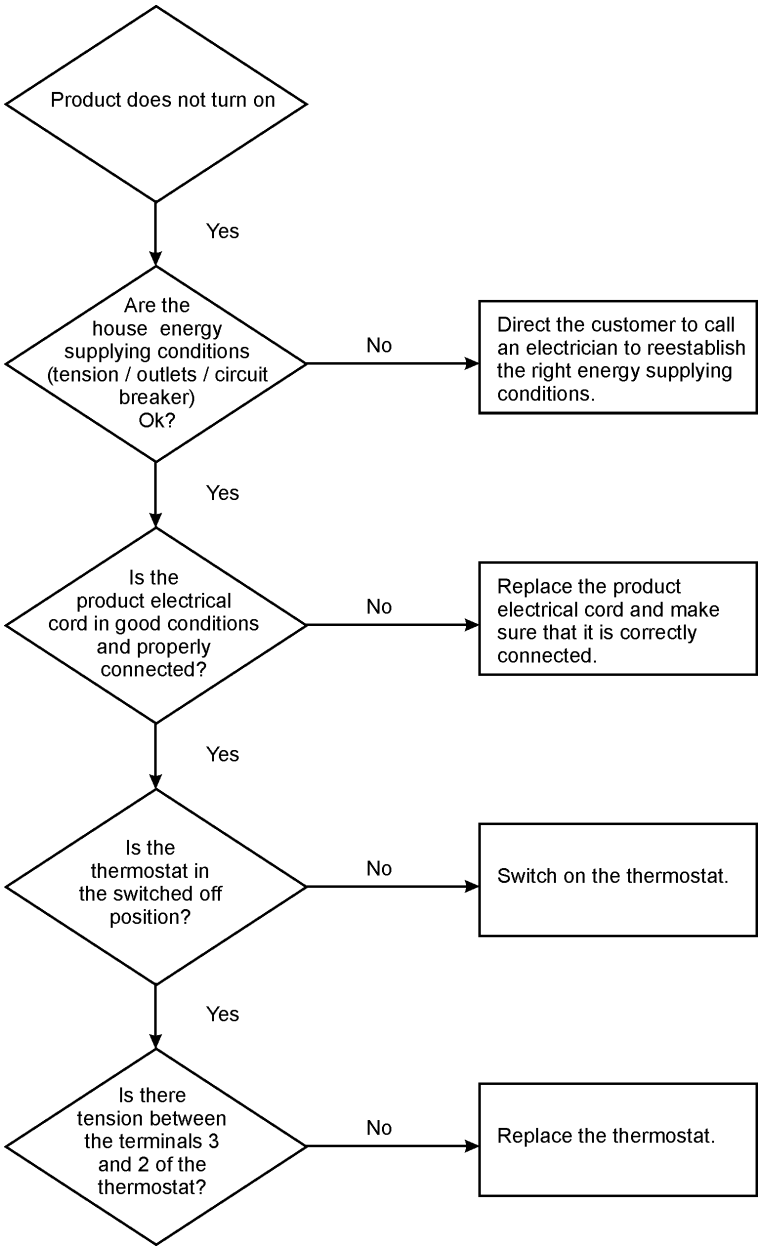
1. TROBULESHOOTING

1.1 Product does not turn on


Product does not turn on
Yes
Are the house energy supplying conditions (tension / outlets / circuit breaker) Ok?
No
Direct the customer to call an electrician to reestablish the right energy supplying conditions.
Yes
Is the product electrical cord in good conditions and properly connected?
No
Replace the product electrical cord and make sure that it is correctly connected.
Yes
Is the thermostat in the switched off position?
No
Switch on the thermostat.
Yes
Is there tension between the terminals 3 and 2 of the thermostat?
No
Replace the thermostat.

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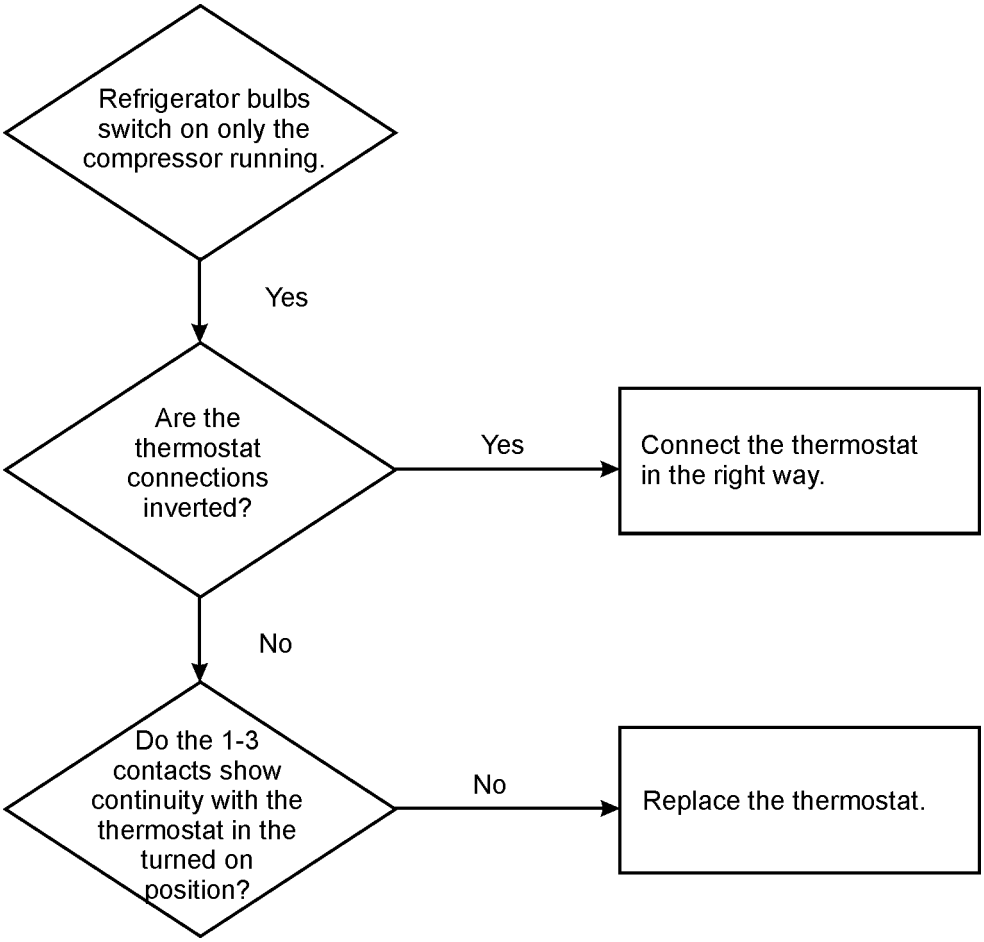
1.2 Refrigerator bulbs switch on only when the compressor is running.


Refrigerator bulbs switch on only the compressor running.
Yes
Are the thermostat connections inverted?
Yes
Connect the thermostat in the right way.
No
Do the 1-3 contacts show continuity with the thermostat in the turned on position?
No
Replace the thermostat.

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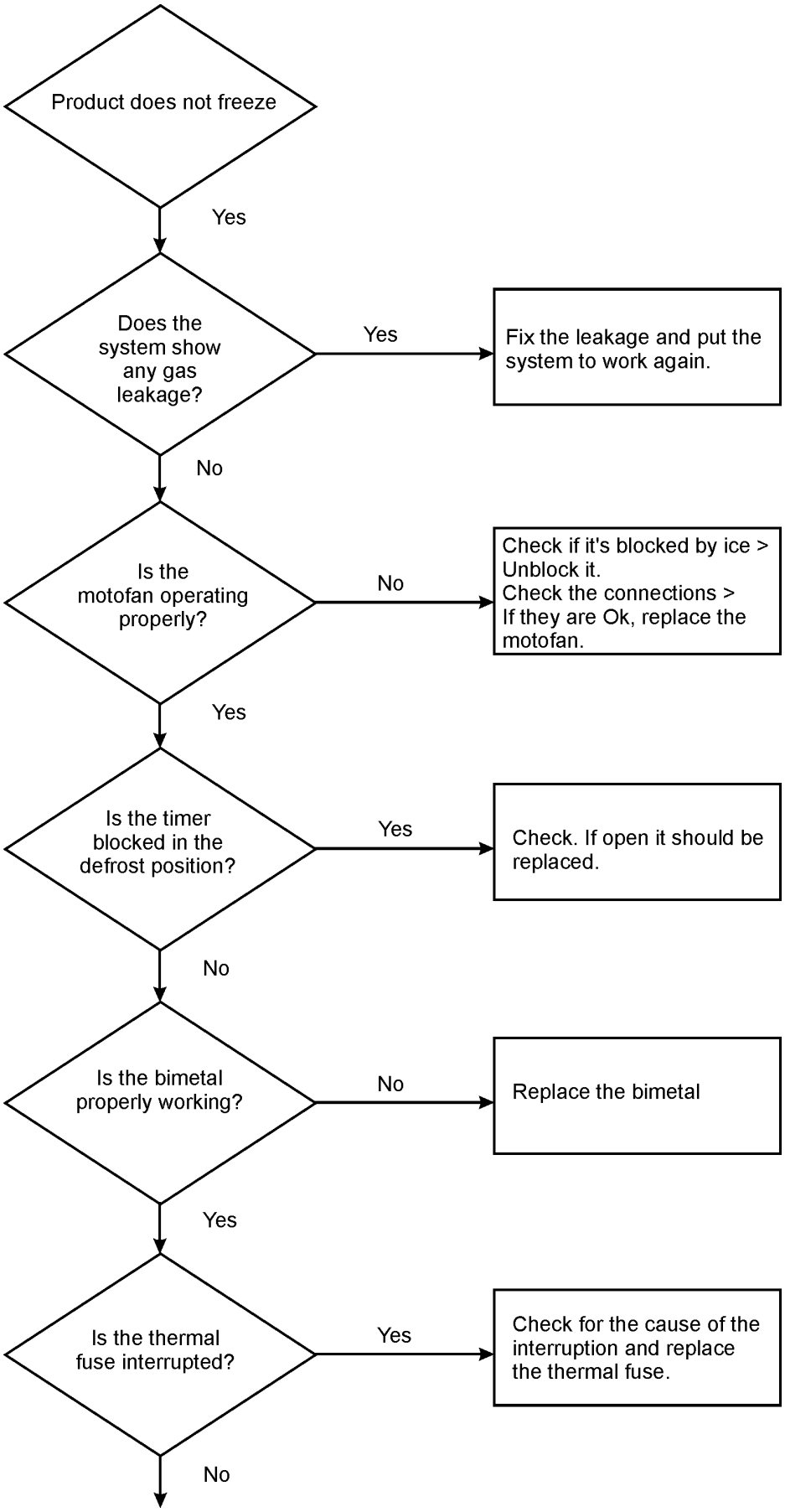
1.3 Product does not freeze.


Product does not freeze
Yes
Does the system show any gas leakage?
Yes
Fix the leakage and put the system to work again.
No
Is the motofan operating properly?
No
Check if it's blocked by ice > Unblock it.
Check the connections > If they are Ok, replace the motofan.
Yes
Is the timer blocked in the defrost position?
Yes
Check. If open it should be replaced.
No
Is the bimetal properly working?
No
Replace the bimetal
Yes
Is the thermal fuse interrupted?
Yes
Check for the cause of the interruption and replace the thermal fuse.
No

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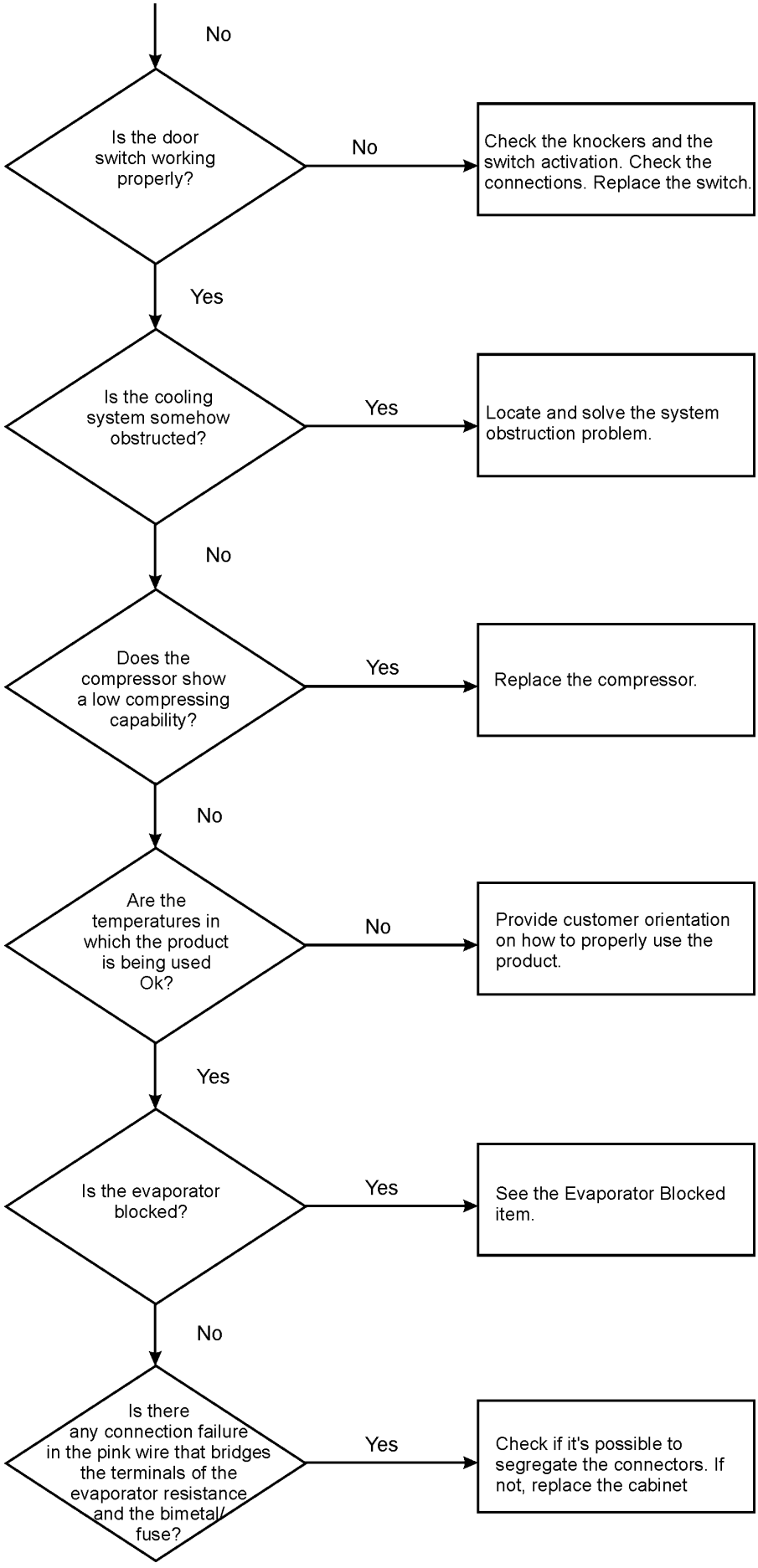
1.3 Product does not freeze (continuation)


No
Is the door switch working properly?
No
Check the knockers and the switch activation. Check the connections. Replace the switch.
Yes
Is the cooling system somehow obstructed?
Yes
Locate and solve the system obstruction problem.
No
Does the compressor show a low compressing capability?
Yes
Replace the compressor.
No
Are the temperatures in which the product is being used Ok?
No
Provide customer orientation on how to properly use the product.
Yes
Is the evaporator blocked?
Yes
See the Evaporator Blocked item.
No
Is there any connection failure in the pink wire that bridges the terminals of the evaporator resistance and the bimetal/ fuse?
Yes
Check if it's possible to segregate the connectors. If not, replace the cabinet

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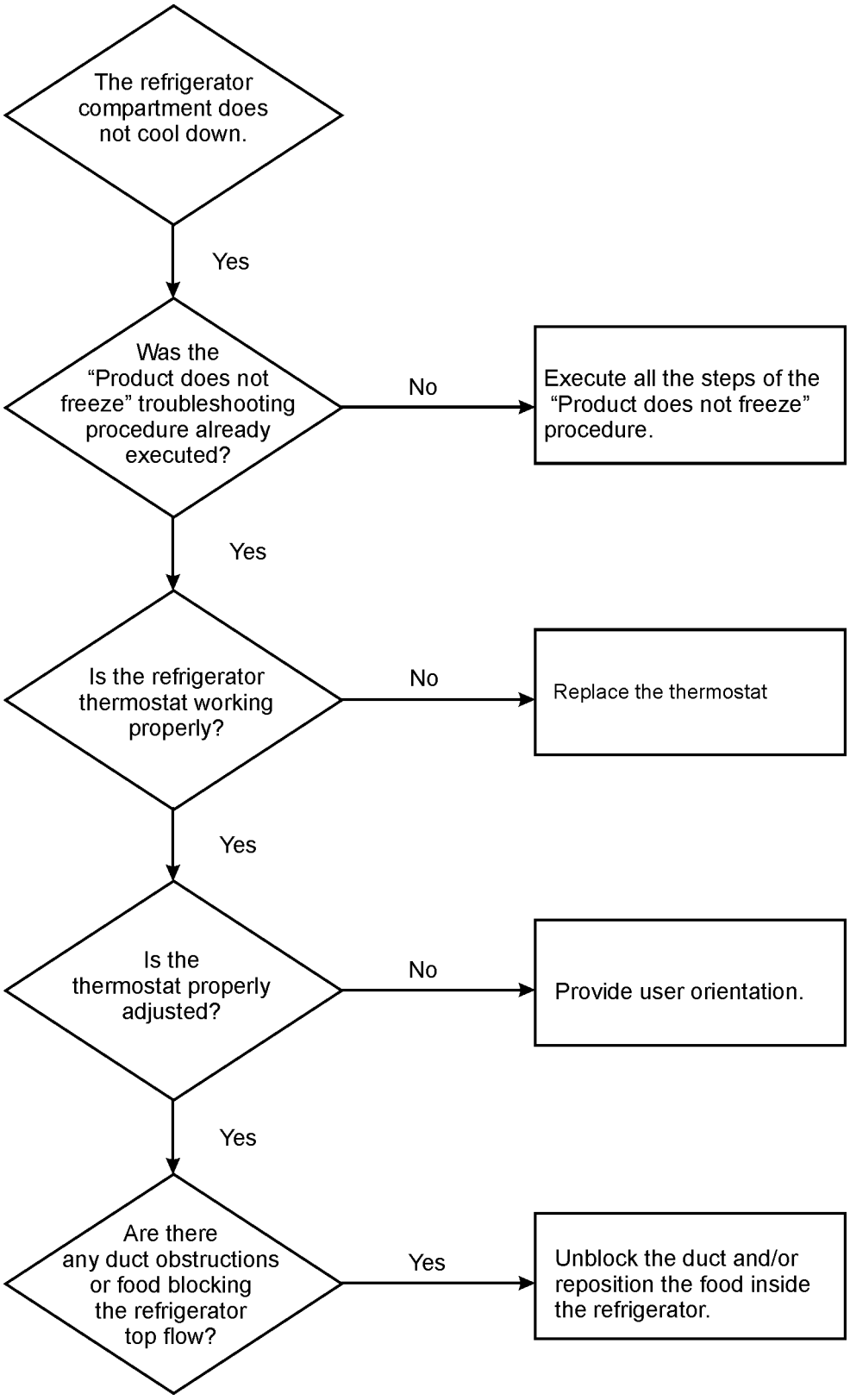
1.4 The refrigerator compartment does not cool down.


The refrigerator compartment does not cool down.
Yes
Was the "Product does not freeze" troubleshooting procedure already executed?
No
Execute all the steps of the "Product does not freeze" procedure.
Yes
Is the refrigerator thermostat working properly?
No
Replace the thermostat
Yes
Is the thermostat properly adjusted?
No
Provide user orientation.
Yes
Are there any duct obstructions or food blocking the refrigerator top flow?
Yes
Unblock the duct and/or reposition the food inside the refrigerator.

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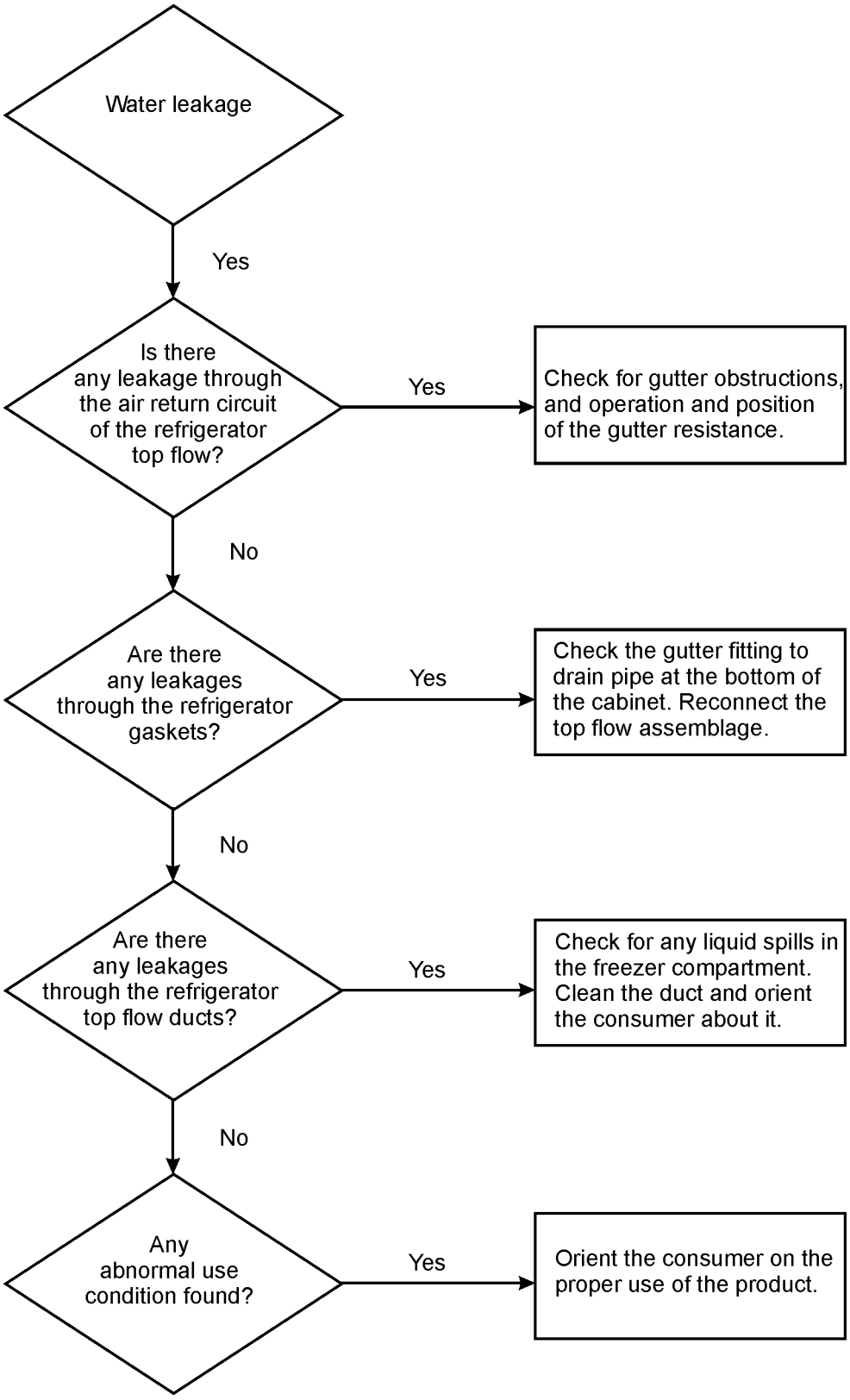
1.5 Water leakage


Water leakage
Yes
Is there any leakage through the air return circuit of the refrigerator top flow?
Yes
Check for gutter obstructions, and operation and position of the gutter resistance.
No
Are there any leakages through the refrigerator gaskets?
Yes
Check the gutter fitting to drain pipe at the bottom of the cabinet. Reconnect the top flow assemblage.
No
Are there any leakages through the refrigerator top flow ducts?
Yes
Check for any liquid spills in the freezer compartment. Clean the duct and orient the consumer about it.
No
Any abnormal use condition found?
Yes
Orient the consumer on the proper use of the product.

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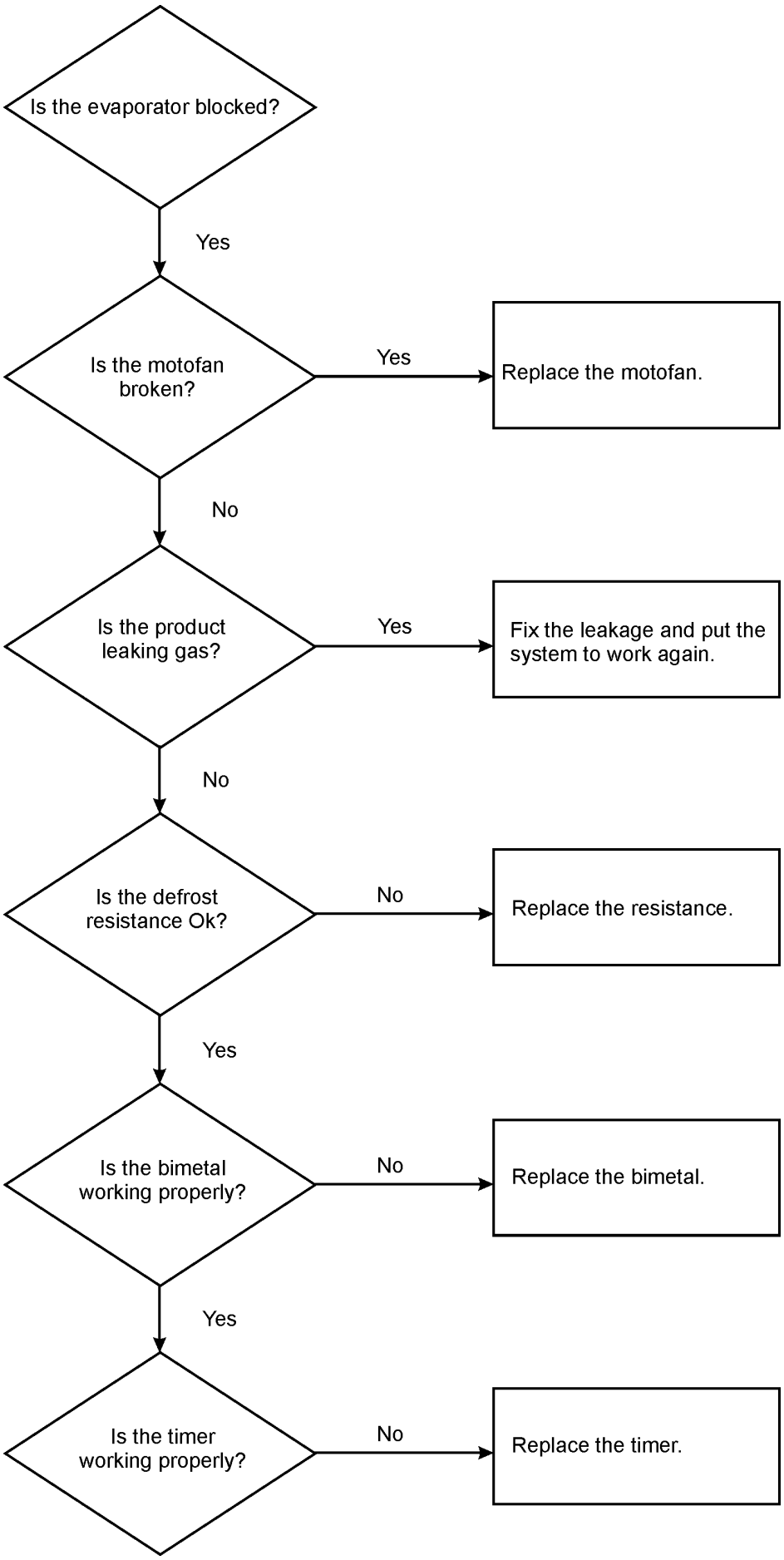
1.6 Blocked evaporator



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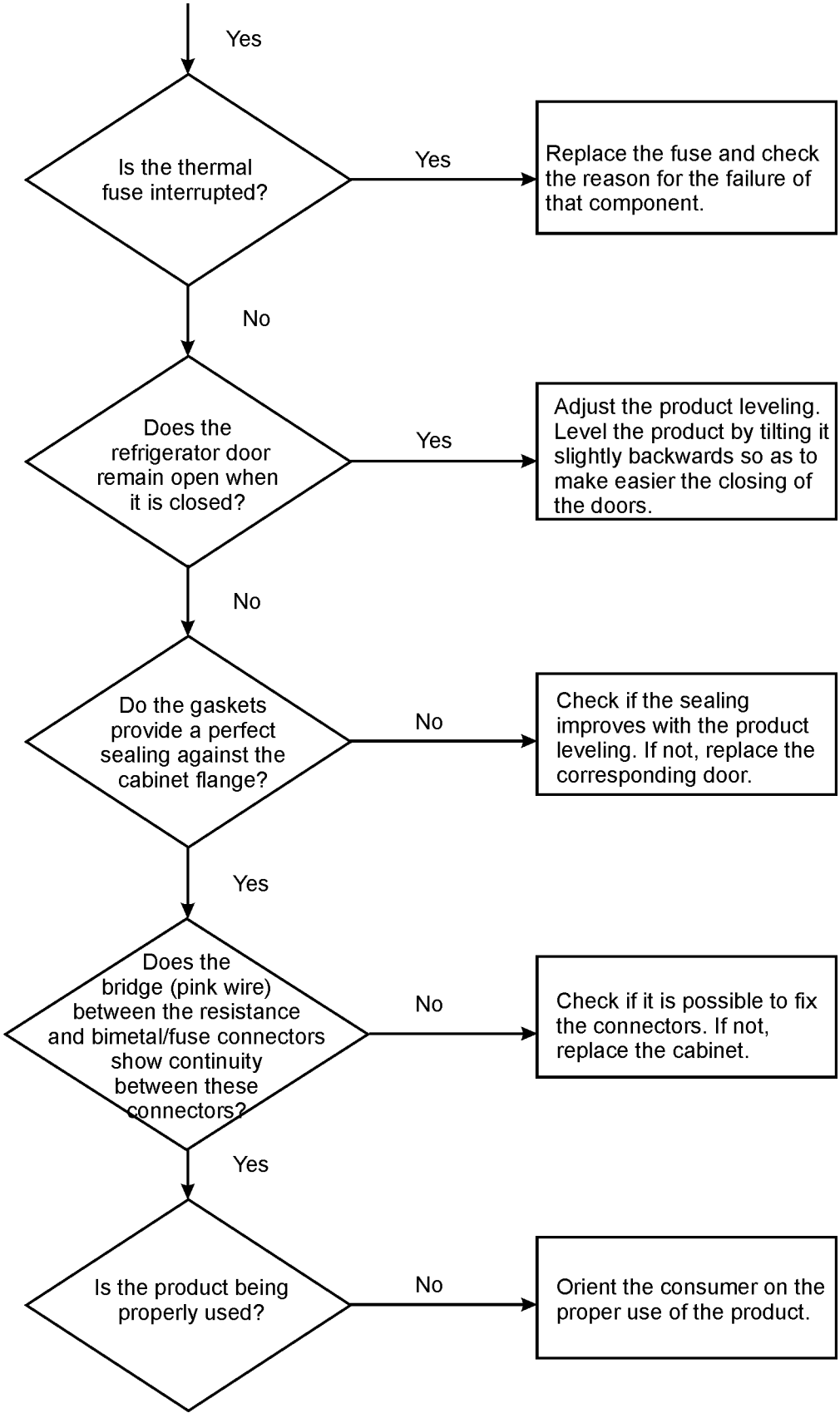
1.6 Evaporador bloqueado (continuação)


Yes
Is the thermal fuse interrupted?
Yes
Replace the fuse and check the reason for the failure of that component.
No
Does the refrigerator door remain open when it is closed?
Yes
Adjust the product leveling. Level the product by tilting it slightly backwards so as to make easier the closing of the doors.
No
Do the gaskets provide a perfect sealing against the cabinet flange?
No
Check if the sealing improves with the product leveling. If not, replace the corresponding door.
Yes
Does the bridge (pink wire) between the resistance and bimetal/fuse connectors show continuity between these connectors?
No
Check if it is possible to fix the connectors. If not, replace the cabinet.
Yes
Is the product being properly used?
No
Orient the consumer on the proper use of the product.

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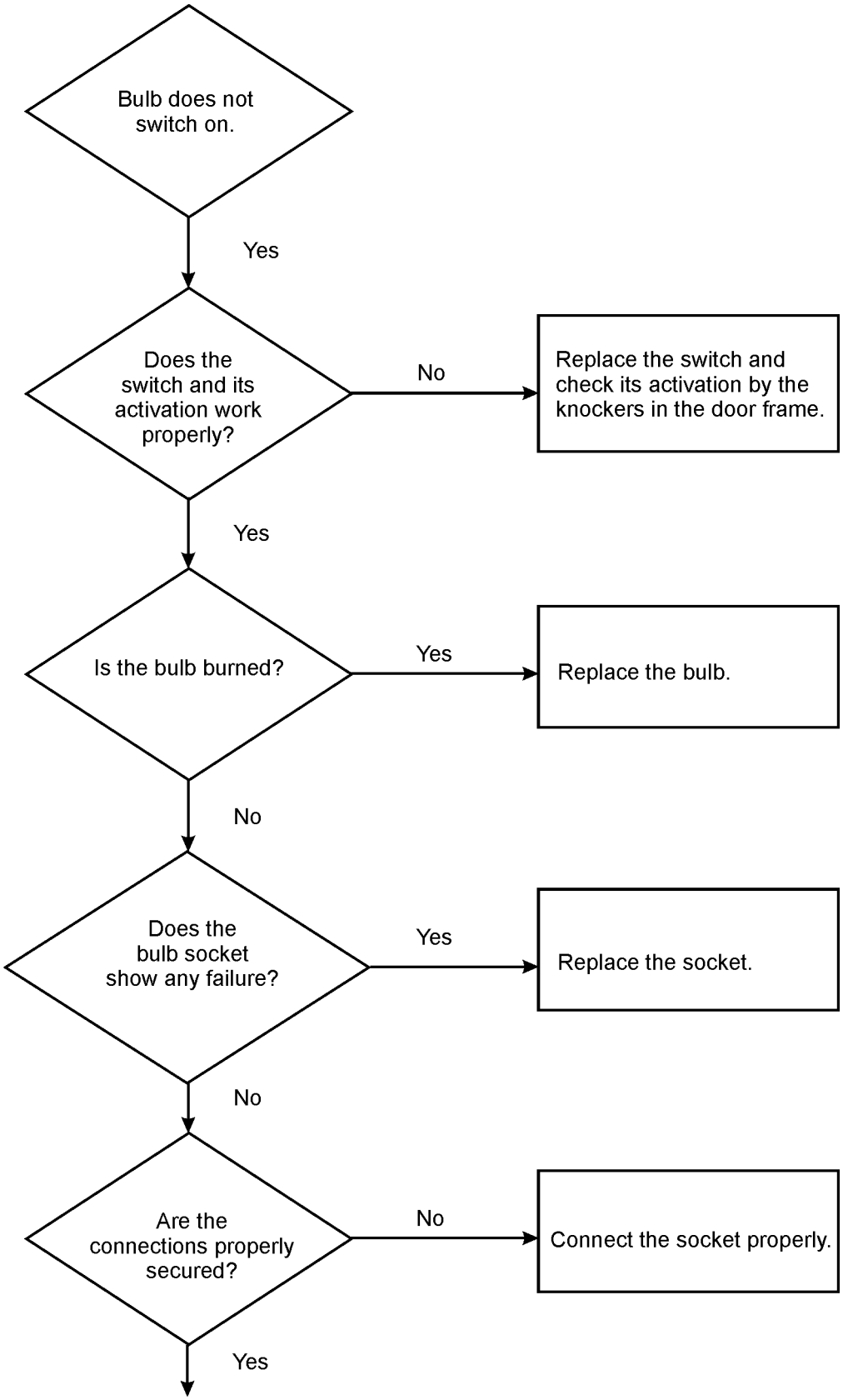
1.7 Bulb does not switch on.



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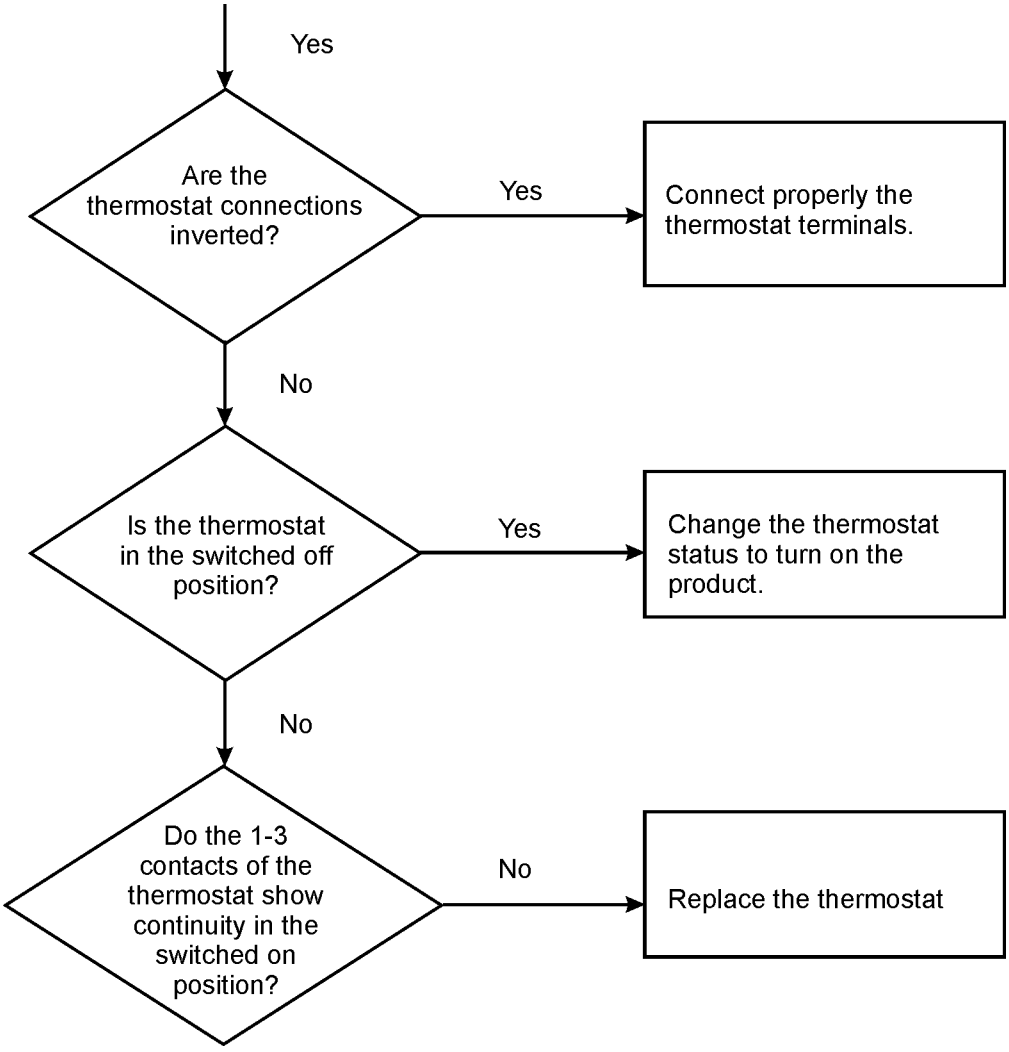
1.7 Bulb does not switch on (continuation).


Yes
Are the thermostat connections inverted?
Yes
Connect properly the thermostat terminals.
No
Is the thermostat in the switched off position?
Yes
Change the thermostat status to turn on the product.
No
Do the 1-3 contacts of the thermostat show continuity in the switched on position?
No
Replace the thermostat

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